

The AGRICULTURAL HISTORY REVIEW



NOV 9 1960

VOLUME VIII 1960

PART II

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PRINCIPAL CONTENTS

Chalk, Heather, and Man

by A. S. THOMAS

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The Pattern of Settlement on the Welsh Border

by G. R. J. JONES

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Sources for Scottish Agrarian History before the
Eighteenth Century

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Selion Size and Soil Type

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PUBLISHED BY

THE BRITISH AGRICULTURAL HISTORY SOCIETY

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Chalk, Heather, and Man

By A. S. THOMAS

THE beautiful English chalk downs, south of the River Thames, are of special interest to archaeologists and botanists; yet there is a great difference between the ways in which the downs are regarded by these two groups. The archaeologists recognize the downs as a centre of intense and prolonged human settlement; Curwen pointed out that the system of upland corn-growing persisted on the Sussex downs for 1,200 years, from the Late Bronze Age to Saxon times. Furthermore, Bowen has shown that there has been much sporadic ploughing on the downs in medieval and later times, so that the pattern of 'Celtic' fields has been altered or effaced in many places. Cornwall considered that "In our region, the plough has frequently spared only such structures and deposits as lay beyond its reach."¹

Many botanists, however, tend to stress the wild nature of vegetation on the downs; some even talk of "virgin downland." Perring in a survey of the literature on chalk grassland included the human factor merely in relation to the effect of grazing and made no mention of cultivation.² Disregard of cultivation has led to the suggestion that chalk heaths—areas where plants typical of acid soils are found on chalk downs, as described by Tansley³—might be formed on wind-blown loess-like material laid down over the chalk in the Bronze Age.⁴ But the area of chalk heath at Lullington is covered with a pattern of 'Celtic' fields and cultivation probably continued there until the coming of the Saxons.⁵ Wind-blown deposits might be expected to accumulate on level ground, but most remaining patches of chalk heath are on slopes, as the chalk plateaux have largely reverted to arable land.

The Nature Reserve at Lullington is one of the largest surviving patches of chalk heath in the south of England. It has altered greatly since myxomatosis exterminated the rabbits which swarmed there until 1954; where there used to be short grass and bell heather (*Erica cinerea*), which is unpalatable to rabbits, the grass is now much longer and the bell heather is being overshadowed by ling (*Calluna vulgaris*), formerly closely grazed by rabbits.

¹ E. C. Curwen, *The Archaeology of Sussex*, 1954, p. 165; H. C. Bowen, 'The Study of Ancient Fields', *The Advancement of Science*, LVI, 1958, pp. 366–8; I. W. Cornwall, *Soils for the Archaeologist*, 1958, p. 49.

² F. Perring, 'A Theoretical Approach to a Study of Chalk Grassland', *J. Ecol.*, XLVI, 1958, pp. 665–78.

³ A. G. Tansley, *The British Isles and their Vegetation*, 1949, p. 551.

⁴ R. M. S. Perrin, 'Nature of Chalk Heath Soils', *Nature*, 178, 1956, p. 31.

⁵ A. S. Thomas, 'Nature of Chalk Heath Soils', *Nature*, 179, 1957, pp. 545–6.

Gorse and other shrubs are spreading rapidly and are tending to obscure the pattern of the heath; the heathers and other plants which need acid soils are not evenly distributed over the level ground, as they would be if growing on deposits laid down over the chalk, but are concentrated on the scarps of the 'Celtic' fields and on the lower sides of the fields, just above the scarps.

A typical scarp near the north-west corner of the Lullington reserve is shown in Fig. I; it faces almost due south. Many years of ploughing must

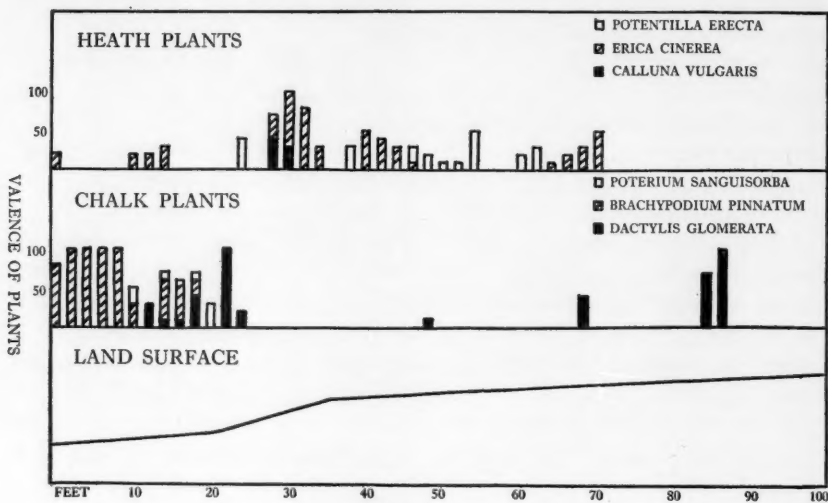


FIG. I

Lullington, 'Celtic' field scarp.

have been needed to build up the bank of earth and chalk rubble at the lower side of the field; the land which was cultivated is still not level, having a slope of 3 degrees above the scarp and of 5 degrees below it; the scarp itself has a slope of about 16 degrees. To get an objective indication of the vegetation, a steel tape was laid down over the scarp, a standard point-quadrat frame was placed at intervals of two feet along it, and all the flowering plants which touched each point were recorded.

Many of the plants were species which grew under a wide range of soil conditions. In order to demonstrate differences in the vegetation along the short transect, in Fig. I there are summarized the valences (the proportions of points which touched any given species) of three plants of heath soils—ling (*Calluna vulgaris*), bell heather (*Erica cinerea*), and tormentil (*Potentilla erecta*)—and of three plants typical of chalky soils—cock's foot (*Dactylis*

glomerata), tor grass (*Brachypodium pinnatum*), and salad burnet (*Poterium sanguisorba*). The diagram illustrates two points:

1. In grassland which has remained undisturbed for a long time, species which require an acid heathy soil may often grow very close to plants which need a soil rich in lime.

2. The greatest concentration of heath plants was not on the nearly level plots, formerly under the plough, but on the upper part of the scarp, on a slope of 16 degrees, and on the land just above the scarp. By contrast, the greatest concentration of chalk-loving plants was at the bottom of the scarp and in the field just below it, where the plough had penetrated deepest into the chalk.

Ploughing has obliterated most of the 'Celtic' field systems in the south of England; in spring and autumn, when the ground has been cultivated for seed sowing, the pattern of soil and chalk will show how many ancient small fields may be combined in one large modern one. But wherever untouched 'Celtic' fields still persist, any heath on them is associated with the tops of the scarps rather than with the more level ground. This fact is well demonstrated on Newtimber Hill, the beautiful National Trust property in Sussex.

The slopes of Newtimber Hill are covered with rather coarse grassland, in which species typical of chalk downs predominate, and the top of the hill is covered with scrub intermixed with grasses such as Yorkshire fog (*Holcus lanatus*) and sweet vernal grass (*Anthoxanthum odoratum*), which often grow on wetter, less alkaline soils. On the west side of the hill, near the top of the slope, there is a large scarp on which ling is plentiful, although there is little of it either below or above the scarp.

At one place below the main scarp there is a small patch, only about twenty yards long, where heath plants cover a series of small scarps, as shown in Fig. II. As at Lullington, the heath plants—ling and tormentil only, for no bell heather was recorded—were most abundant on the scarps and just above them, especially on the steepest and highest scarp, lying between 60 and 70 feet on the transect, and having a slope of 35 degrees.

A second transect was recorded on Newtimber Hill, about fifty-five yards south of the first, on the same part of the slope, with the same aspect, but where there were no scarps—only a fairly uniform slope of about 13 degrees or 14 degrees. The results, shown in Fig. III, demonstrate great differences between the vegetation on the smoother hillsides, typical of Newtimber Hill, and that on the small terraced patch shown in Fig. II. Chalk grassland, such as was growing below the terraces, was also growing on the same contours as the terraces and only a short distance from them. The only feasible explanation seemed to be that much of the hillside had been terraced by ancient

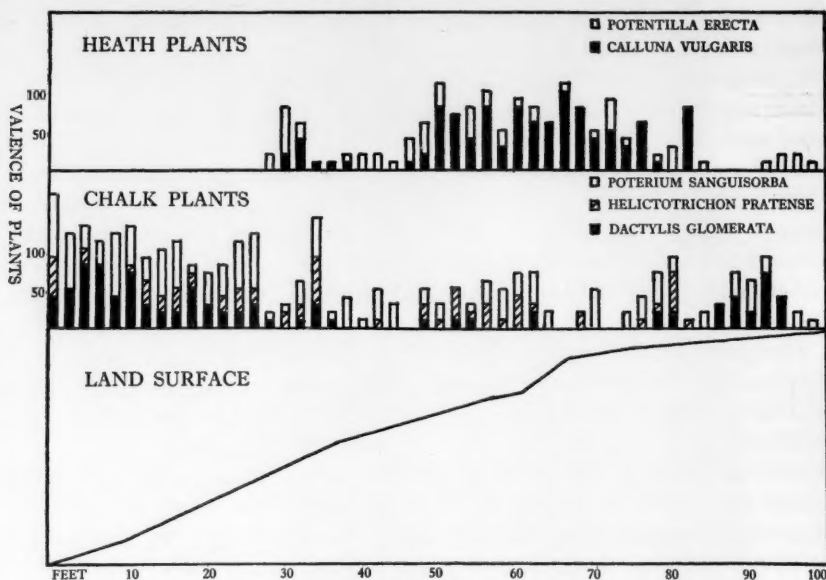


FIG. II

Newtimber, terraces.

cultivation and was largely covered with heathy plants, but that later cultivation had effaced the terraces and, by bringing up some of the chalk, had made the surface soil less acid. This explanation was confirmed by Mr H. C. Bowen, who inspected the site. But why had one patch been left unploughed? Had there been a building on it?

There are very many other instances where patches of ling and other heath plants are growing on mounds or banks, but are absent from smoother downland turf nearby. One of the most interesting stretches of downland in the south of England is that which covers the escarpment on the north side of the Pewsey Vale in Wiltshire; the great differences between the vegetation on some of the hills, close to each other, having the same aspect and derived from the same layers of chalk, show that the turf must have been greatly altered by human influence.¹ No bell heather was found on the escarpment and only a few patches of ling, which were on some mounds on Milk Hill, at the top of the gully to the west of it, and on a bank—possibly of Iron Age date—below Gopher Wood.

¹ A. S. Thomas, M. Rawes, and W. J. L. Banner, 'The vegetation of the Pewsey Vale escarpment', *J. Brit. Grassl. Soc.*, XII, 1957, pp. 39-48.

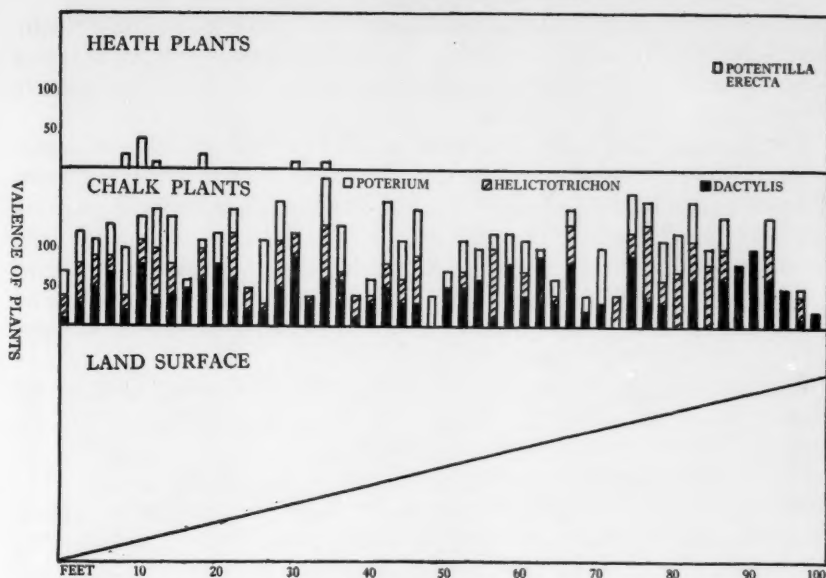


FIG. III
Newtimber, hillside.

Similarly on Overton Down, about four miles to the north of Milk Hill, air photographs show ridges of ploughing over 'Celtic' fields;¹ and no heather or ling was to be found there, except on some mounds of one small shoulder, protruding from the general line of the down and on that account left unploughed.

Most of the land at the base of the downs, even the bottoms of narrow valleys, has been under the plough in recent years. Kingley Vale, near Chichester, is one of the few valleys which have escaped recent cultivation and this Nature Reserve protects many ancient fields and many patches of heather, as well as the magnificent yew trees. There is much heath on the clay and gravel which covers the plateau, true chalk heath at the edge of the escarpment; and there is ling and dwarf furze (*Ulex minor*), a typical heath plant, growing on some scarps near the bottom of the valley.

In many of the examples cited above, the heath plants were growing on well-defined scarps, approximately on the contour. They have also been found on low, ill-defined banks running down chalk slopes, banks less than a foot high, but broad; to the botanical eye, these banks are obvious from the

¹ O. G. S. Crawford and A. Keiller, *Wessex from the Air*, 1928, p. 124.

heath plants growing on them and not from their topography. These heathy banks are quite different from the high banks of cross-ridge dykes, on none of which definite heath vegetation has been noted, and which are usually covered with chalk-loving plants.

The bands of heath were first noted on the spur in the south-east corner of the Kingley Vale reserve. There were low banks about twenty yards apart, running southwards on a slope of about 8 degrees, and on them were growing not only ling and bell heather, but also trees and shrubs such as bramble, hawthorn, and yew. One band of heath was especially interesting, for a bowl barrow lay across it, and heather was growing on this barrow; there was no heather on the large bell barrows which dominate the skyline of Kingley Vale, or on many other barrows which have been searched.

A transect across the band of heath, about twenty-five feet north of the barrow, is shown in Fig. IV. Heath plants were sparsely scattered in the grassland, but they were concentrated on the low bank between 20 feet and 30 feet on the transect; conversely, chalk plants were scarce on the bank. The idea that chalk-loving trees might grow on the same low bank down a chalk slope as were the patches of heath, served to throw light on the puzzling occurrence of heath on the sides of the main gully at Kingley Vale, where bell heather was noticed at the base of a yew tree on a slope of 22 degrees, and by itself on a slope of 25 degrees. It seemed unlikely that chalk heath should be formed on so steep a slope, for inversion of the soil as it moved downhill was likely to prevent acidity at the surface. And then it was noted that the patches of heath were usually in line with irregular lines of yew trees; this was well shown by a line of yews down the head of the gully.

The same idea explained the puzzling distribution of plants on a steep slope near the north-east corner of the Old Winchester Hill Nature Reserve near Petersfield. It had been noted that the trees in a young yew wood near the base of the slope tended to be in lines; and then it was found that in some cases there were patches of ling on slopes above, as steep as 23 degrees, and that there might be hawthorns near the top of the slope, all in the same line. Furthermore, the lines tended to be parallel. Where the slope faced west, the lines ran straight up and down; but where the hill curved around to face south-west, the lines were inclined and ran diagonally down the slope. One of the larger banks, with yews at the bottom, with a large patch of heath on a slope of 16 degrees near the centre, and with a yew and hawthorns above, was at an angle of 13 degrees with a line directly up and down the slope. Once one bank had been seen, traces of others at distances of about ten yards west and twenty yards east could be discerned. Not only heath and shrubs, but the rabbit holes also tended to be in the same lines, evidence of made-up soil, for

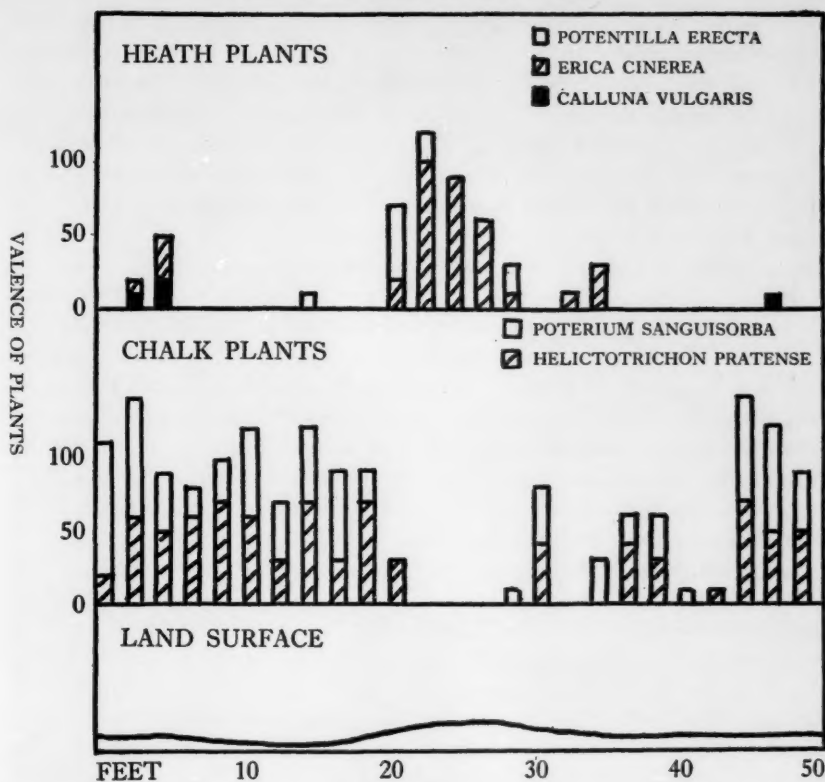


FIG. IV
Kingley Vale, belt of heath.

many of the rabbit burys on the downs are on tumuli or the scarps of fields.

The sparser lines and patches of heath on steep slopes at Kingley Vale seemed also to show the same tendency to be parallel, and to be inclined to the slope on the east side of the gully. Even better examples of bands of heath running down a chalk slope were found on Turnworth Down, about a mile south of Okeford Fitzpaine in Dorset; dark strips of heath, about twelve yards apart and separated by pale strips of grassland, ran down a north-facing slope of about 15 degrees. On a slope east of that bearing the heath, belts of shrubs such as elder and hawthorn ran down the slope.

Belts of heath down steep slopes seem rare on the Sussex downs, where most of the searching for them has been done; lines of shrubs are frequent,

and they often show the tendency to be parallel and inclined to the slope. Even where shrubs are absent, there may be a tendency for lines to show in the grass, as on Windover Hill near Eastbourne, where the lines run up and down the head of the gully, but are inclined where the slope curves around.

What is the cause of these lines? They do not follow the strata of the chalk; they can hardly be caused by wind. They do not seem to arise from paths; man-made paths are usually at the heads of gullies or at the ends of spurs; sheep paths have much influence on the vegetation but tend to be on the contour;¹ badger tracks tend to fan out over the slopes.

In tropical Africa, where steep slopes are cultivated by hoes, the rubbish is thrown into rows like the belts of trees and shrubs to be seen on the chalk in England. Therefore it seems possible that many of the chalk slopes of southern England, too steep for ploughing, have been cultivated by hand at some time; Bowen has said that some of the slopes were hoe-tilled in Romano-British times. Some of the bands of heath and shrubs may date from this time; some, like the one associated with the bowl-barrow at Kingley Vale, may be older. Not only the plough, but the hoe also may have had much influence on soils over the chalk.

Denudation of chalk has probably been much more rapid than was formerly supposed,² and this fact will help to explain the formation of chalk heath on level sites; it will not fully explain the preponderance of heath on some slopes. Is it not possible that the acid surface soil is not derived from the chalk, but from plant remains deposited on top of it? This theory would explain the growth of heath in bands down some slopes and on the scarps of 'Celtic' fields, for it is on the scarps that the weeds would be dumped when the fields were weeded by hand. And it might explain the absence of heath from areas of level ground over the chalk, known to be undisturbed, such as the east part of Hod Hill which is only three miles from the heathy slope of Turnworth Down.

A very puzzling phenomenon has been the presence of patches of ling on the steep south or south-west faces of Iron Age embankments; at Old Winchester Hill the ling is growing on a slope of 33 degrees and at Cissbury Ring on a slope 30 degrees; and in both cases the slopes must have been much steeper when the embankments were built of chalk rubble. Even if there had been rapid denudation of chalk when exposed to the full heat of the sun and the full force of driving rain, yet it is surprising that acid surface soils should have been formed on these embankments, when none has been obvious on

¹ A. S. Thomas, 'Sheep paths', *J. Brit. Grassl. Soc.*, xiv, 1959, pp. 157-64.

² P. A. Jewell, 'Natural History and Experiment in Archaeology', *The Advancement of Science*, lxx, 1958, pp. 165-72.

much older Neolithic camps. Is it not possible that the acid shallow surface was derived from a rotting palisade and not from the chalk?

Experience at Old Winchester Hill has shown that a thin layer of organic material may allow heath plants to grow above the chalk. After myxomatosis killed off most of the rabbits in 1954, dead grass accumulated on the turf inside the camp, so that by 1957 the living grasses were being suppressed and were being replaced by other plants, including heath plants like tormentil. Now, after two seasons of winter grazing, the layer of dead grass has gone and the turf is reverting to that of normal chalk downland. The animals seemed to eat little of the dead grass; it was mostly destroyed by their treading, a fact that may partly explain the persistence of chalk heath on slopes which are not grazed and trodden so much as level ground. Once patches of heath had been formed, might they not have maintained themselves under the British climate, unless destroyed by burning, cultivation, or treading?

Nearly all the level ground and the more gentle slopes on the chalk of southern England are now under arable crop or leys; repeated ploughing has smoothed out the 'Celtic' fields, even some of the larger lynchets. Heavy tractors, bulldozers, and winches are now being used to clear many of the steeper slopes. It is highly desirable that a study should be made of the patterns of heath, shrubs, and trees, on these slopes, and of the soils, before it is too late.

SUMMARY

In many cases where heath plants are growing on shallow soil over the chalk in southern England, they are concentrated on the scarps of 'Celtic' fields, on banks, or on mounds. In a few cases, the heath plants are in patches or bands on low banks running down the slope, sometimes at an angle; shrubs and trees may frequently be seen in lines on slopes too steep for ploughing.

It is suggested that the lines of heath and of shrubs on slopes must indicate former cultivation by hand; and that the shallow acid soils on which the heath plants are growing may be derived, not from the chalk, but from plant residues accumulated during the work of clearing land for crops, or of weeding the crops while they were growing.

ACKNOWLEDGEMENTS

Grateful acknowledgement is made of all the help received from Mr H. C. Bowen, both in the field and in the writing of this paper; and of the kind permission of the National Trust to record the vegetation on Newtimber Hill.

The Pattern of Settlement on the Welsh Border

By G. R. J. JONES

IN the zone which incorporates the western border counties of England and the adjoining marcher lordships of Wales the existence of an important cultural frontier has long been recognized, although like all such boundaries it cannot everywhere be defined precisely in topographic terms. To Seebohm, in his study of the English Village Community, it was clear "that in the eleventh century, as it had done previously for 400 years, the river Wye separated by a sharp line the Saxon land, on which the manorial land system prevailed, from the Welsh land on which the Welsh tribal land system prevailed."¹ Likewise Gray, in his analysis of English Field Systems, attempted to demonstrate that the boundary between the Celtic System and the Midland System passed through this zone.² The purpose of this paper is to reveal some of the major factors which underlie the arrangement of farmsteads within the zone. As the references to Seebohm and Gray imply, however, such an analysis must be based not simply on the patterns of farmsteads as they exist today, important though these are both as starting-points and as links in the chain of evidence, but also on the social and economic aspirations of the communities which created these patterns and modified them through past ages.

For the student of settlement this border zone, where the tides of struggle between English and Welsh ebbed and flowed over centuries, presents an embarrassment of problems, but adequate answers have hitherto been all too few. Why, for example, should the isolated farmstead, often set in the midst of its own fields, abound on the Welsh side of the border and yet co-exist there alongside small nucleated hamlets? How was it that both these forms of settlement were associated until recently with unequivocal traces of open field? Were the Welsh hamlets simply a product of late and sporadic diffusion from the counties on the English side of the border where in Domesday times the hamlet of one or two ploughlands was by far the most frequent unit of settlement, or were these hamlets of an earlier origin? Similarly on the English side, for example, can the contrasts between the three-field system formerly associated with the hamlets of Herefordshire and the irregular

¹ F. Seebohm, *The English Village Community*, 1905, p. 208.

² H. L. Gray, *English Field Systems*, 1915, pp. 83-271.

open-field system of 'forest' areas be explained away simply as an expression of early, as opposed to late, colonization?

The attempt made in this paper to answer these questions will be based almost entirely on Welsh evidence. The English evidence, examined and re-examined since the late nineteenth century, is already sufficiently familiar to members of the British Agricultural History Society. To English eyes, on the other hand, the Welsh evidence is still obscured in something akin to a Celtic twilight. The Welsh countryside is still too readily interpreted as a pastoral reserve where Welsh Abrahams with their tribes roamed at will until the late Middle Ages, and the scattered farms of modern Wales are interpreted as a direct expression of these arrangements. This is in part due to the oversimplified equation of pastoralism with the accidented relief and moist climate of Wales, an equation all too easily made, given the predominance of animal husbandry in modern Wales. A moment's reflection on the need for grain in a self-sufficing economy during the Middle Ages should have been sufficient to cast doubts on this interpretation, but in the nineteenth century, when studies of rural settlement were initiated, the theory of unilinear social evolution held sway. Since this theory emphasized, in Darwinian terms, that pastoralism inevitably preceded cultivation, no such doubts arose. Nor were these earlier views unpalatable to Welshmen, for, well versed in Biblical lore, they were not unwilling to link their oldest traditions with those of the Hebrews of old. Welshmen readily imagined their forbears as free tribesmen, practising an almost exclusively pastoral economy, with some no doubt looking down in contempt upon the settled servile cultivators of the English plain. Englishmen on the other hand found solace in the belief that their Saxon forbears were at a more advanced stage of social and economic evolution than the tribal Welsh. For these reasons, and perhaps also because of prejudices against the "primitive communism" envisaged by Morgan and Engels,¹ earlier investigators have consistently underestimated the importance of the evidence for social stratification in early Celtic society, and in particular for the existence of a settled servile population. Closer examination of the Welsh evidence within recent years has revealed that there was not simply one Celtic system, as Gray would have it, but, in the centuries following 1100 A.D., two fairly distinctive Celtic systems. On the one hand there were communities of bondmen who normally resided in small nucleated hamlets; on the other hand there were corporate groups of freemen, which can be described technically as agnatic 'clans', whose members frequently resided in more widely dispersed homesteads.

¹ Cf. E. E. Evans, 'The Ecology of Peasant Life in Western Europe', in W. L. Thomas (ed.), *Man's Role in Changing the Face of the Earth*, 1956, p. 231.

I

Pride of place in this account can be given to the second of these systems, since this is probably the least familiar to students of agrarian history. Each clan occupied a resting place, otherwise known in Latin as a *lectus* and in Welsh as a *gwely*. This resting place was a permanent stake of arable land which entitled the clan members to grazing rights over extensive common pastures. Sometimes one resting place was confined within the limits of a single township or vill, but often one resting place would embrace land within a number of widely scattered townships.¹ Frequently, as a result, any one member of a clan might hold his stake of arable land in a number of townships often several miles apart; but even within any one township the arable 'lands' (*selions*) of any one clansman were usually scattered through a number of small patches of open-field arable, known as sharelands.

The average endowment of the typical member of a free clan at the close of the thirteenth century was less than ten acres of arable land, a figure which implies that even the most widely scattered 'lands' could not be neglected because of their remoteness or difficulty of access. Sometimes distant 'lands' were held and cultivated by undertenants, but usually these problems of distance were overcome by means of co-operation. Individuals would frequently undertake to plough 'lands' for each other so as to obviate frequent journeys to and from distant sharelands. The other major aspects of agrarian co-operation concerned the grazing of animals. The prevalence of spring cereals, mostly oats, meant that the arable sharelands were available as common fallow pastures in winter. Similarly the common pastures within each township were preserved for use in winter, a practice made possible by the grazing in summer of large upland wastes which, like the shire-moors of Northumbria or the wealds of Kent, were common to a large number of townships.

Each resting place had originated when the eponymous ancestor of the clan, or his immediate predecessor, was permitted to appropriate arable land in a place often referred to as the Old Settlement (*Hendref*). This arable land, subject to equal division *per stirpes* among male heirs, soon became an open-field shareland (*rhandir*). Partible inheritance, by reducing the share of any one heir in the first area occupied, made necessary a territorial expansion away from the Old Settlement on to sites commonly less favourable from a physical standpoint within the territories over which the nascent clan exer-

¹ T. Jones Pierce, 'The Gafael in Bangor Manuscript 1939', *Transactions of the Honourable Society of Cymmrodorion*, 1942, pp. 162-88; G. R. J. Jones, 'Some Medieval Rural Settlements in North Wales', *Transactions and Papers 1953, Institute of British Geographers*, 1954, pp. 51-64; 'Medieval Open Fields and Associated Settlement Patterns in North-West Wales', in X. de Planhol (ed.), *Géographie et Histoire Agraires*, 1959, pp. 314-22.

cised rights of pasture. With most heirs links of sentiment, reinforced by a shrewd awareness of the superior quality of the Old Settlement lands, led to an early fragmentation of the typical Old Settlement. As a result, the largest shares of most heirs came to lie in the newer sharelands and it became convenient for many an heir, on first inheriting, to establish his homestead away from the Old Settlement. To economize on arable land, which has always been the scarce factor of agricultural production in Wales, the homesteads of many heirs were frequently built on the outer edges of the newer sharelands. Since the average shareland rarely contained more than 100 acres, there frequently developed what may be described as girdle patterns of dispersed dwellings, the shape of each girdle flexibly adapted to that of the contour and its dimensions dependent on those of the nuclear shareland.¹

Few of these girdles have survived, for the resting place contained within itself the seeds of a fairly rapid decline. Partible inheritance appears to have encouraged a high rate of population growth, and thus the perpetuation of the *gwely* system was dependent upon the opportunities for territorial expansion. There were obvious geographical and technical limits to this process, and as soon as this stage was reached the continued operation of *gavelkind* reduced the arable stakes of some heirs below the economic minimum. At this stage, some individuals with greater resources could buy up the holdings of any one heir, and as a result adjoining 'lands' were gradually consolidated into compact blocks.² In most areas this consolidation had already taken place by the opening of the sixteenth century and many of the consolidated blocks had been enclosed with hedges or banks. Similarly, if not simultaneously, enclosed pastures were carved out of the hitherto undivided common pastures within the townships. Estate consolidation transformed many sharelands, and notably the oldest sharelands on the best soils, into large, consolidated, and thus isolated farms often of 250 acres or more, with, for Wales, correspondingly large enclosed fields. To this day, however, remnants of sharelands and girdle-patterns, fossilized at the partial stage of consolidation, are still to be found, especially in that northern portion of the border zone which lies west of the present national frontier.

II

Hamlets inhabited by small groups of bondmen were the characteristic units of settlement under the first Celtic system, which as we shall see was

¹ G. R. J. Jones, *op. cit.*, 1959, pp. 316-17: 'The Distribution of Medieval Settlement in Anglesey', *Anglesey Antiquarian Society Transactions*, 1955, pp. 27-33, 68-73, 77-9.

² *Ibid.*; T. Jones Pierce, 'Agrarian Aspects of the Tribal System in Medieval Wales', in X. de Planhol, *op. cit.*, pp. 329-37.

certainly the older of the two systems. Although it would be rash to claim that every bond settlement was invariably a hamlet, Welsh law makes it clear that the ideal bond settlement of the Middle Ages was a unit containing nine houses closely grouped together. The complement of this ideal hamlet was one plough, one kiln for the drying of corn, one churn, one cat, one cock, one bull, and one herdsman who cared for the common herd. Each hamlet was encompassed or adjoined by an open-field shareland, beyond which lay the common pasture, parts of which were 'mountain land' (*terra montana*) periodically subject to temporary cultivation.¹ Thus constituted, the hamlet was the local unit of both pastoral and agricultural co-operation, but in addition every hamlet was part of a wider group known as a *maenor*, which for agrarian purposes was subject to the control of a land mayor (*prepositus*). In return for their labour services and rents, which were heavy as compared with those of the freemen but light by English manorial standards, bondmen of these hamlets were allowed by the lord of each commote or administrative neighbourhood to exercise rights of occupation over their small areas of arable land and permitted to graze their livestock on the lord's wastes. These rights were shared equally *per capita* among the adult males of each hamlet community; thus the arable land was subject to re-division and re-allocation with any change in the size of the adult male population of the hamlet. The lowly status of these bondmen was emphasized by the control to which they were subject even for the most mundane farming activities. The land mayor was responsible not only for allocating lands to the bondmen but also for deciding which crops were to be grown and which plots were to be cultivated. The actual cultivation was conducted by all tenants in common but the mayor was responsible for allocating to each a rôle in the common tillage, and until this was done no cultivation could be commenced. Each bondman garnered the produce of his own plots, but thereafter all plots became common once more and served as pasture until the next tillage.

Within each commote there were a number of bond hamlets, but by far the most important was the hamlet where the mayor resided and which was known therefore as the mayor's settlement (*maerdref*). Within a short distance of each mayor's settlement was the court (*llys*) of the lord of the commote; accordingly the lands of each mayor's settlement embraced fairly large areas of demesne land or board land (*tir bwrdd*) used for the sustenance of the court. Such land, normally the most suitable for cultivation within the commote, was worked on behalf of the lord by the bondmen of the *maerdref* and the outlying hamlets of the commote working under the supervision of the land mayor.

¹ G. R. J. Jones, *op. cit.*, 1959, pp. 320, 327-8.

Few of the bond hamlets of Wales have survived, for reasons which are closely bound up with the conditions of bond-land tenure. The rents and services imposed on each hamlet were a communal obligation, so that if but one tenant survived he was to have the whole hamlet in return for all the rents and services imposed on the hamlet. A decrease in the bond population such as occurred during the Great Plague meant a corresponding increase in the burdens of the survivors. Not unnaturally many bondmen took advantage of the turmoil of the later Middle Ages to escape their obligations by flight, so that many bond lands and demesnes, now held by the English Crown or by Lords Marcher, fell into decay.¹ As a result these lands provided a favourable field for the activities of estate-consolidators who by means of legitimate leases, or even illegitimate encroachments from adjoining *gwely* land, gradually converted bond land, or intermingled bond and demesne land, into compact farms. Consequently most of the bond hamlets in medieval Wales have disappeared. Nucleated settlements survived only where there were favourable local conditions to promote such a survival. The two extremes of survival and disappearance are best illustrated by reference to the northern borderland.

The mayor's settlement of Meliden, home manor of the bishop of St Asaph, provides clear evidence of the survival until relatively recently of medieval and even older arrangements (Fig. I). In 1357 there were no less than 358 acres of arable in demesne, the greater part being on those soils rich in lime and having a favourable crumb structure which are known today to the soil scientist as brown earths of high base status. Some two-thirds of this arable, which was divided between the bishop and the Chapter, lay intermingled in the open fields with the selions of the tenants, but 134 acres of arable, 12 acres of meadow, and an orchard were held in severalty by the bishop. This land in severalty presumably lay in the vicinity of the Old Court (Hens Llys) about a quarter of a mile north of the hamlet; for here by 1839 a large and fairly well consolidated farm of the same name had emerged, although field names like *Maes-y-dre* (the Township open field) and *Talard hirion* (*sic*) (Long headland) make it clear that this land too had once lain in open field.² As late as the eighteenth century the court rolls reveal that the community of the hamlet still exercised certain communal responsibilities, for in 1734 the township was fined for not having a pinfold and stocks. Appropriately enough, in the same year one inhabitant of the hamlet was fined

¹ T. Jones Pierce, 'Some Tendencies in the Agrarian History of Caernarvonshire during the Later Middle Ages', *Transactions of the Caernarvonshire Historical Society*, 1, 1938, pp. 1-27.

² P.R.O., Ministers' Accounts, 1143/23; Tithe Redemption Commission, Apportionment and Map, Meliden Parish, 1839.

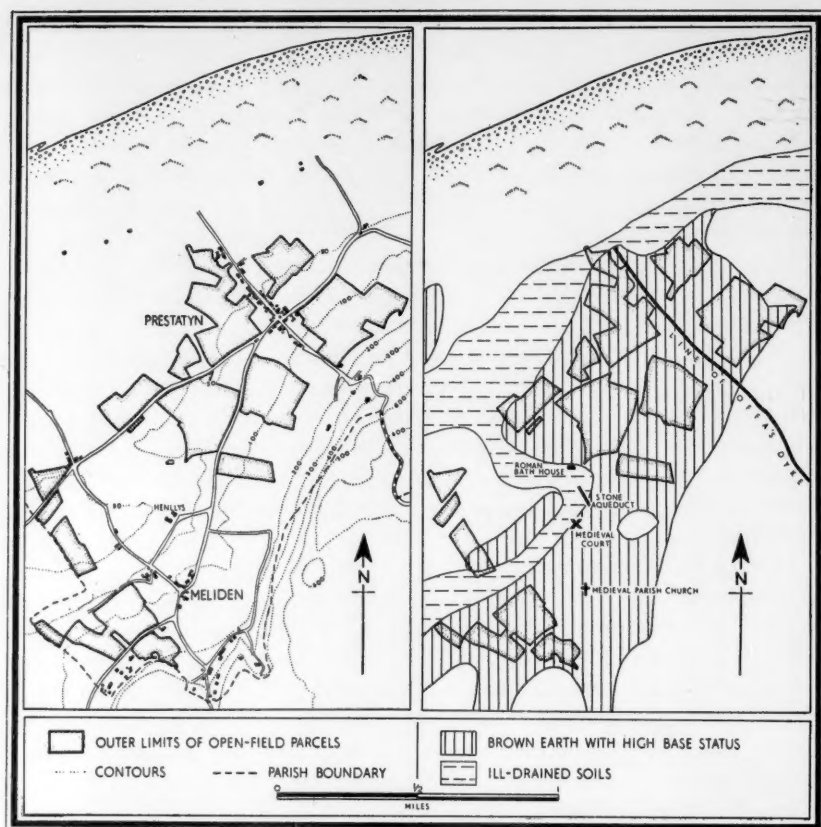


FIG. I

for not laying open three enclosures.¹ Enclosures were however permitted on payment of fines, and by 1839 open-field arable was confined to the southern part of the township. The hamlet of Meliden, which in 1699 had contained twelve houses "by the church,"² survived despite these changes, though by 1839 it was being increasingly overshadowed by the squatters' cottages erected on the common upland pasture to the east and the dispersed farmsteads which had been established in the west as a result of the consolidation and enclosure of the open fields. At Meliden, as in the neighbouring secular mayor's

¹ National Library of Wales: E.C.E. MSS., 215790; N.L.W., MSS., 4353, 14542 F; Plymouth MSS., 158.

² R. H. Morris (ed.), *Parochialia*, 1909, pp. 55-6.

settlement of Prestatyn (which provides an even more striking instance of late surviving open field), the persistence of a community of smallholders in the initial nucleus of settlement was closely bound up with opportunities to combine agriculture with other activities. Not only were conditions here favourable for the production of corn, but in addition the smallholders were not entirely dependent on the produce of their scattered 'lands', for the copper mine in the south of Meliden was an important source of supplementary income.¹

By way of contrast, at Dinorben, seven miles to the south-west, conditions were less favourable for the development of supplementary activities, for the mayor's settlement occupied an interior site on the southern flank of a low limestone ridge (Fig. II). As a result the arable lands of the hamlet community which in 1334 had lain intermingled with some 50 acres of demesne, were already at an advanced stage of consolidation by the sixteenth century. By the eighteenth century these lands had been incorporated into a single farm known appropriately as Fardre (a mutated form of the name *Maerdref*). Where formerly had stood a small hamlet, adjoined by a church and corn-drying kiln, there now stand but the substantial buildings of a single large farm.²

III

Strictly speaking, the sharp distinction between free clans and bond communities, drawn for the sake of clear exposition in earlier sections of this paper, was not true of medieval Wales. Earlier investigators assumed that resting places resulted from the settlement of one or more freemen on lands which somehow or other had escaped settlement or even permanent cultivation until a late date, variously interpreted as ranging between 900 and 1400 A.D. Even Jones Pierce, who was the first to demonstrate that the resting place was an institution which developed only after 1100 A.D., adhered to this virgin-land theory.³ Closer examination of the evidence, however, has shown that resting places frequently developed on land formerly occupied by bondmen, who were often granted along with the lands they tilled to the free founders of clans. Significantly enough, the oldest resting place of which we

¹ Tithe Redemption Commission, Tithe File 14338; P.R.O., Home Office, Enumerators' Returns, Meliden Parish, 1841.

² P. Vinogradoff and F. W. Morgan (eds.), *Survey of the Honour of Denbigh*, 1914, pp. 230-3; P.R.O., Miscellaneous Books Land Revenue, 235, ff. 21-6; T.R.C., 'Tithe Apportionment and Map, St George Parish, 1840.

³ T. P. Ellis, *Welsh Tribal Law and Custom in the Middle Ages*, I, 1926, p. 147; T. Jones Pierce, 'Medieval Settlement in Anglesey', *Anglesey Antiquarian Society Transactions*, 1951, pp. 7-9.

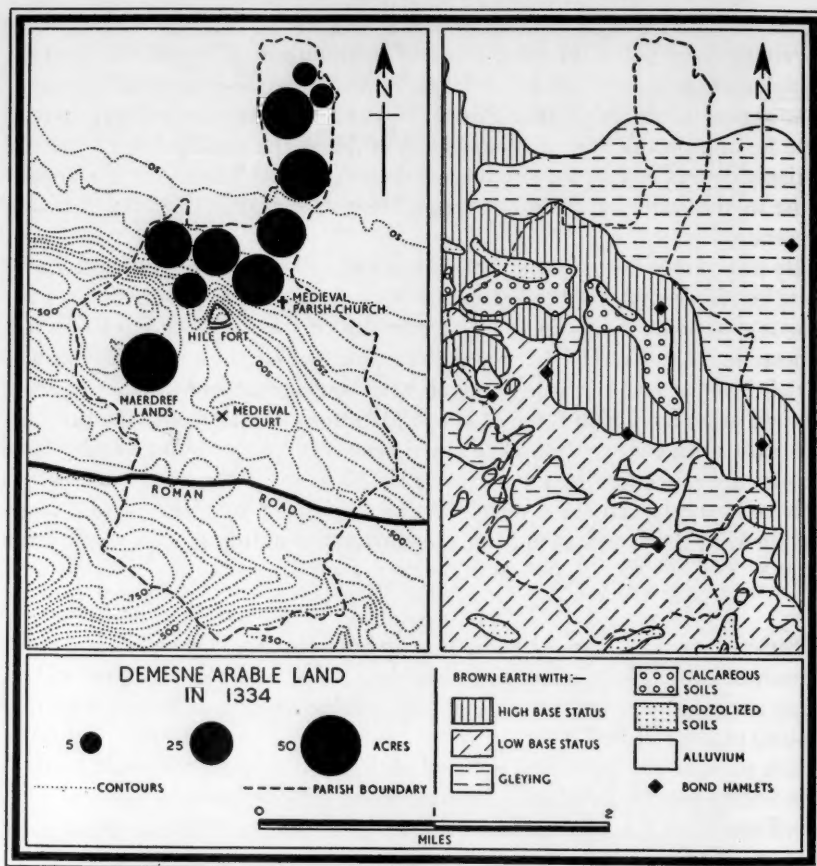


FIG. II

have record is that which developed after Elidyr, son of the prominent free-man Rhÿs who held Erbigstock in 1066, was allowed to appropriate land on the border of the mayor's settlement of Llandegla in the years following the first Norman impact on the northern border of Wales. From this *pied à terre* west of the Clwydian Hills his descendants looked eastwards for lands to settle, and by 1315 the 97 adult males of this clan held land in no less than ten other settlements in an area often exposed to the ravages of war and formerly tributary to the mayor's settlement of Wrexham.¹

¹ Illustrated in G. R. J. Jones, 'Rural Settlement: Wales', *Advancement of Science*, xv, 1959, pp. 338-42.

The emergence of such resting places caused the disappearance of many bond hamlets. A parallel process whereby some bond communities were enfranchised and permitted to hold land by resting-place tenure had a similar result. It follows therefore that before 1100 A.D. bondmen were probably more numerous and freemen were certainly less numerous than is indicated in late medieval records. Domesday Book provides ample testimony to this effect for the area of the border. Each of the Welshmen described as living by Welsh law at Caerleon had one plough team,¹ and should be regarded as 'notables' (*uchelwyr*), or prominent freemen, rather than as humble freemen characteristic of later centuries when large clans had emerged and landed resources had been subdivided. The same is probably true of the individual Welshmen recorded for the border as paying substantial rents and frequently owning whole plough teams. Suggestion hardens into certainty in Gwent (Monmouthshire) where Berddig, a Welshman and the king's minstrel, held in 1086 three villi containing five plough teams on the same easy terms as had been imposed by the Welsh king Gruffydd. These and seven other villi had formerly been part of a *maenor* of fourteen bond hamlets which had been broken up in order to endow prominent freemen.² But that such freemen were but a small minority is indicated by the existence alike in Gwent, Archenfield, and Moldsdale of *maenors* embracing 7, 13, or 14 bond hamlets, some of which were still under the control of Welsh land mayors left undisturbed in office.³

Although Domesday Book provides concrete evidence for the existence of groups of bond hamlets, and even records a unit named Maenor (Mainaure) in Archenfield, this alone is unlikely to satisfy those who adhere to the belief that the vast majority of Welshmen were free tribesmen and in economy semi-nomadic pastoralists. Fortunately therefore it can be demonstrated that the two mayor's settlements of Meliden and Dinorben considered above are of some antiquity.

The hamlet of Meliden was the oldest settlement in the parish of Prestatyn, for here was located the parish church recorded in Domesday Book. In 1086 Meliden was linked to Prestatyn and both were small bond settlements, but their earlier history was quite distinct. According to an account recorded in the medieval records of St Asaph, Meliden was granted to St Kentigern by the Welsh ruler Maelgwn Gwynedd in the sixth century A.D.⁴ Although it is

¹ *Domesday Book*, I, p. 185b.

² *Ibid.*, p. 162a.

³ *Ibid.*, pp. 162a, 181a, 267b; J. E. Lloyd, *A History of Wales from the Earliest Times to the Edwardian Conquest*, II, 1948, pp. 357-99.

⁴ National Library of Wales: Peniarth MS. 231.B., *Liber Ruber Asaphensis*, 200-2; St Asaph MS. B/22, *Alter Liber Pergamenus*, f.1 dorso.

difficult to substantiate this claim, Meliden does appear to have been old-established. Its name, like that of all other settlements in this area west of Offa's Dyke, is of Welsh origin, whereas neighbouring Prestatyn was originally known by the English name Preston.¹ Nor is it unlikely that this Preston was named after the pre-existing priest's *tun* immediately to the south-west. For defensive reasons the Preston which became Prestatyn was a long narrow settlement built along the line of Offa's Dyke, the frontier work constructed in the late eighth century,² which still underlies the High Street. It follows therefore that Meliden was certainly in existence before this date. But a still greater antiquity is implied for Meliden by the discovery, to the north of the Old Court, of traces of a Roman bath-house and other structures which have been interpreted as the remains of a villa associated with the fortress at Chester.³ The Old Court, ascribed here by local tradition to Maelgwn Gwynedd, occupied a site so close to that of the villa that one is tempted to equate the court with the villa and ponder the question whether the social stratification between the Welsh lord and his bondmen did not already exist on Welsh soil in Roman times.

A conclusive answer to this question would undoubtedly be regarded as premature on the basis simply of the Welsh evidence, yet the evidence already available for Dinorben indicates that the answer should be in the affirmative. As the prefix *din* indicates, Dinorben, like a significant number of other bond settlements in Wales, was named after the immediately adjoining hill-fort. Dinorben, which had been a centre of importance in the Dark Ages,⁴ appears in 1334 as a manor and *caput* of the commote of Rhos Isdulas. All the freemen of this commote were responsible for the upkeep of the buildings of the court, but the actual construction of these buildings was a duty borne by the bondmen of five hamlets appendant to Dinorben.⁵ The medieval court was sited to the south of the hill-fort, then known as Pendinas, but in earlier centuries was probably within the ramparts, where the spade of the archaeologist has revealed a succession of substantial huts.⁶ One was a circular structure (of Little Woodbury type) dated to the third and fourth centuries A.D., when it was inhabited, or so numerous coins would suggest, by an affluent

¹ B. G. Charles, *Non-Celtic Place-Names in Wales*, 1938, pp. 230-1.

² C. Fox, *Offa's Dyke*, 1955, pp. 5-28.

³ R. Newstead, 'The Roman Station, Prestatyn', *Archaeologia Cambrensis*, xcii, 1937, pp. 208-32; *Ordnance Survey Map of Roman Britain*, 1956, and Introduction, p. 33.

⁴ J. G. Evans (ed.), *The Black Book of Carmarthen*, 1906, p. 69.

⁵ *Survey of the Honour of Denbigh*, pp. 215-16, 220, 222-3, 225-8, 239, 268-9.

⁶ H. N. Savory, 'Excavations at Dinorben Hill Fort, Abergele (Denbs.)', 1956-7, *Bulletin of the Board of Celtic Studies*, xvii, 1958, pp. 296-309.

household.¹ In later layers, possibly of the fifth and sixth centuries A.D., there is evidence to suggest a large rectangular hall of the kind described in the Welsh laws and medieval extents as characteristic of a lord's court. The medieval court on the outskirts of each mayor's settlement in Wales was sometimes encompassed by a protective wall;² we can therefore envisage that the ramparts of a hill-fort served a similar purpose at an earlier stage of Celtic social development. Dinorben provides a clear answer to that question which for so long has puzzled archaeologists:³ what kind of social organization in the Early Iron Age made possible the construction of such large structures as this hill-fort, which embraced within multiple ramparts an area of no less than five acres? An undertaking such as this would have required control over the resources of an area far larger than the lands of one hamlet. The rents and labour services levied by the lord of Dinorben on the tenants of the appendant hamlets of his *maenor* provide testimony as to how the requisite control over the resources of a wide area was effected.

The evidence for Dinorben, moreover, gives some pointers as to the siting of these appendant hamlets in the sub-Roman period. For the manor as a whole detailed post-medieval records make it possible to locate with precision the arable demesne lands described in the survey of 1334. At that date there were some 300 acres of demesne arable which lay in three distinct types of physical setting. In the north the arable was located on brown earths subject to gleying, or in other words imperfectly drained; this imperfection of drainage was probably caused by the adverse effects on soil-water circulation of woodland clearance undertaken after 1311,⁴ for the area of arable demesne recorded in that year was less than half the figure for 1334. In the south the

¹ The site at Little Woodbury (Wiltshire) was interpreted as a lone steading of the type now commonly accepted as the unit of that dispersed settlement which many archaeologists regard as characteristic of the Early Iron Age in Britain. Analogy with Dinorben suggests, however, that Little Woodbury could equally well be interpreted as the *llys* of the local lord who ruled—probably among others—the adjacent lowland hamlet of Britford (the ford of the Britons).

² G. R. J. Jones, 'The site of Llys Aberffraw', *Anglesey Antiquarian Society Transactions*, 1957, pp. 5-7.

³ S. Applebaum, 'The Agriculture of the British Early Iron Age as exemplified at Figheldean Down, Wiltshire', *Proceedings of the Prehistoric Society*, xx, 1954, p. 14.

⁴ A. Muir, 'The Post-Congress Excursion Round Britain', *Transactions of the Third International Congress of Soil Science*, III, 1936, p. 266. I am indebted to Dr Muir, of the Soil Survey of England and Wales, not only for this observation concerning the effects of forest clearance on soil drainage, but also for permission to incorporate in my illustrations some hitherto unpublished results of the Soil Survey. Mr E. Roberts, formerly of Bangor, was kind enough to permit access to the unpublished maps of the Soil Survey.

Maerdref lands were sited on a slope at an elevation of about 450 ft, but some at least of these lands were favoured for grain cultivation alike by their south-facing aspect and their inherent quality as brown earths of high base status. Thus the state of affairs described in the survey of 1334, when the 52 acres of arable demesne at *Maerdref* were valued at only 6d. per acre (as compared with 1s. and 1s. 3d. per acre for the arable north of the ridge), and because of their exhaustion were used only as sheep pasture, is best attributed to long-continued cultivation. Cultivation of the *Maerdref* lands was probably initiated in fact when the site on which the hill-fort stands was first occupied in the fifth century B.C. For the remaining intermediate zone under demesne cultivation, evidence of a different kind suggests that lowland cultivation had an early beginning at Dinorben. The recent excavations of the hill-fort revealed an asymmetrical winged ploughshare in a layer containing numerous objects of late Roman and sub-Roman character. As Payne has demonstrated, such winged ploughshares were devised for the cultivation of heavy lowland soils.¹ This example at Dinorben was probably used for the cultivation, at the very latest by the sub-Roman period, of the band of lime-rich brown earths which extends along the northern foot of the limestone scarp. Taken in conjunction with that for Meliden, this evidence for the cultivation of the northern scarpfoot at Dinorben makes it clear that some of the appendant hamlets, like Cegidiog (St George) where the parish church was sited, could well have been established by the early centuries A.D. on those same fertile lowland sites they occupied in the Middle Ages.

IV

One question of critical importance for the student of settlement is whether this *maenor* organization, whereby a court was maintained by a network of appendant hamlets, existed on the English side of the border as well as in Wales. Seebohm envisaged a sharp division between English and Welsh social organization in this borderland and deliberately chose the manor of Tidenham, which was east of the Wye and in his opinion had probably been English since the battle of Deorham in 577 A.D., as a singularly useful example of the Saxon manorial system. Yet the feature which obtrudes from the evidence which he quoted for Tidenham is the similarity between this manor and the Welsh *maenor*. The rents and services demanded of the *geburs* or servile tenants of Tidenham were akin to those of Welsh bondmen; they were far lighter than the burdens imposed on the *geburs* of the pre-Con-

¹ F. G. Payne, 'The British Plough: Some Stages in its Development', *Agricultural History Review*, v, 1957, pp. 74-84.

quest *Rectitudines* of England or the burdens imposed on the villagers of the English Midlands in the Middle Ages.¹ Moreover, like the Welsh *maenor*, Tidenham was a discrete estate containing more than one significant settlement; interestingly enough one of the outlying hamlets of Tidenham was sited on and named after a Roman road, and a second bore the name Lancut which indicates that it was a Welsh church hamlet.

Elsewhere along the border the similarity between social arrangements and settlement patterns on both sides of the border was equally pronounced as late as 1086. Maesbury in north-west Shropshire was described in Domesday Book as a manor of 7 hides for geld with 5 berewicks where 10 Welshmen and a priest had 8 ploughs, and where 6 ploughs more could have been at work.² Later records make it clear that this Domesday description merely conceals a *maenor* at a late stage of development, where small free clans were about to emerge over and above the bond substructure. By the thirteenth century this lordship, now known as Oswestry, was composed of a large number of appendant villis inhabited by resting-place clans, and a small number of bond hamlets held by conditions reminiscent of Welsh bond tenure but modified by the superimposition of heavy labour services.³ The hill-fort of Old Oswestry enhances the parallel with Dinorben; as with Dinorben, its construction was probably made possible by that discrete organization (represented here in 1086 by the 5 berewicks of Maesbury and perhaps also the 8½ berewicks of the larger royal manor of Whittington) which enabled the resources of a wide area to be mobilized.

A little way to the south a "district of Wales" (probably Ceri and Cydwain) belonged in 1086 to the castellany of Montgomery, as also did 52½ hides for geld in 22 appendant hamlets.⁴ No less than 5 of these hamlets were still inhabited by bond communities holding land by Welsh bond tenure as late as 1540.⁵ Among them was Thornbury, named no doubt after the scrubby vegetation on the remains of the Roman fort built to protect the ancient Severn ford known as Rhyd Chwima. That this small settlement adjoining a strategic Roman fort should still house a Welsh bond community in 1540 is strong presumptive evidence that the network of hamlets focused on the new castle of Montgomery in 1086 was in being, at least in embryo, when the hill-

¹ F. Seebohm, *op. cit.*, pp. 148-59; see also W. Rees, *South Wales and the March*, 1924, pp. 165-73; A. J. Robertson (ed.), *Anglo-Saxon Charters*, 1939, p. 204; R. Lennard, *Rural England, 1086-1135*, 1959, pp. 364-8.

² *Domesday Book*, I, p. 253b.

³ W. J. Slack (ed.), *The Lordship of Oswestry, 1393-1607*, 1951, pp. 21-37, 142-171.

⁴ *Domesday Book*, I, pp. 253b, 254a.

⁵ J. R. W. Whitfield (ed.), 'The Lordship of Cause (1540-41)', *Transactions of the Shropshire Archaeological Society*, LIV, 1953, pp. 63-8.

fort of Ffridd Faldwyn, which towers above Montgomery Castle, was constructed during the Early Iron Age.

Similarly Domesday evidence can be advanced for many of the Iron Age forts of Shropshire, alike in the southern uplands and the northern lowlands. Of some twenty major forts,¹ not less than thirteen were adjoined by important lowland settlements which were either the heads of territorial hundreds or the centres of discrete estates with outlying members or berewicks; sometimes they combined both these attributes. Alberbury, below the Breiddin, was the head of a hundred whereas Wrockwardine, below the Wrekin hill-fort, was the head of a hundred and also the focus of $7\frac{1}{2}$ berewicks. Doubtless Wrockwardine was responsible for that organization of wide territorial resources which the construction of Wrekin hill-fort demanded. That Wrockwardine was overshadowed in 1086 by Shrewsbury, head of its own hundred and the focus of no less than 57 berewicks scattered in various parts of the county, is perhaps merely the result of those rearrangements which followed the supersession of the Wrekin and Wroxeter by another centre in the lowlands west of Haughmond hill-fort yet well protected by a pronounced meander of the Severn.²

Throughout the borderland a similar relationship between the Iron-Age hill-fort and the administrative arrangements which existed in 1086 can be discerned, but nowhere perhaps is this more striking than at the hill-fort of Abington near Leominster in Herefordshire. The great royal estate of Leominster, a *manerium* with 16 members of which some were up to six miles distant, was worked in 1086 by 29 ploughs on the demesne and no fewer than 201 ploughs of the tenants.³ Almost everywhere along the border a striking continuity in the administrative arrangement of settlements can be demonstrated between the prehistoric and medieval periods. This continuity appears to be more closely associated with the Iron-Age hill-fort, and to a lesser extent with Roman military installations, than with the relatively few Roman villas to be found along the border.

¹ L. F. Chitty, 'How did the Hill-Fort Builders reach the Breiddin?', *Archaeologia Cambrensis*, xcii, 1937, pp. 129-50.

² I am indebted to Dr Finberg for allowing me a preview of his forthcoming paper on 'The Political Background of Settlement in the Welsh Border'. This accords far more readily with the new thesis on the history of settlement advanced in this paper than any previous interpretation. The supersession of Wroxeter and Wrockwardine by Shrewsbury was probably not direct. Miss Chitty has recently suggested that Pengwern, the traditional early capital of Powys, was not at Shrewsbury as hitherto accepted by some authorities, but at the fort known as the Berth on an island site near Baschurch.—'Introduction to Shropshire Archaeology', *Archaeological Journal*, cxiii, 1956, p. 182. Baschurch, however, no less than Wrockwardine and Shrewsbury, was the head of a hundred in 1086.

³ *Domesday Book*, I, pp. 180a-181a.

The discrete estate or federal manor of England, though known to have been old-established, has always been ascribed to the outward expansion of settlement from villages first established by Anglo-Saxon pioneers.¹ Seebohm and all subsequent workers have assumed that the patterns of settlement in England and Wales were distinct *ab initio*, but the evidence presented in this paper shows that the patterns of settlement on the English and Welsh sides of the border had a common origin which dates back at least to the Iron Age. On both sides of the border the fundamental unit of settlement was the hamlet surrounded by its small patch of open field. In some areas favoured in their physical setting, for example parts of Shropshire, these hamlets developed into larger villages encompassed by more extensive open fields and were worked by an increasingly complicated field system until enclosure supervened. In Herefordshire on the other hand the three-field system emerged in association with the small nucleated hamlet. In forest areas like Morfe in eastern Shropshire clear traces of Celtic hamlet arrangements survived as late as the sixteenth century, though increasingly blurred by assarting and the creation of severalties.² On the Welsh side of the border hamlets survived far less frequently, as the large isolated farmstead on the site of Thornbury suggests. Sometimes this was a direct result of the consolidation of bond land which followed the flight of bond communities, but frequently the conversion of bond hamlets into the resting places of groups of kinsmen was an intermediate stage in this process alike in North and South Wales. But in the Welshries of the marcher lordships of South Wales large free clans did not emerge and the girdle of dispersed farmsteads rarely developed. The large clans with which earlier investigators were wont to people the whole of Wales emerged only along the more exposed frontiers of the late surviving independent principality of Gwynedd. That these large clans should have emerged here, rather than elsewhere in Wales, serves as a reminder that the geographical factors which condition the development of patterns of settlement are invariably very complex. In a border zone such as the one with which we have been concerned in this paper they include not only such factors as relief, soils, climate, and vegetation, which condition the various means of wresting a living from the soil, but also those space relations and lines of movement of importance to warring groups of men.

¹ For a recent example see T. H. Aston, 'The Origins of the Manor in England', *Transactions of the Royal Historical Society*, 5th Ser., VIII, 1958, p. 75.

² H. L. Gray, *op. cit.*, pp. 37-9, 93-7, 108, 139-56.

Sources for Scottish Agrarian History before the Eighteenth Century¹

By GORDON DONALDSON

FOR the period from the thirteenth century to the sixteenth a good deal of information about Scottish agriculture in certain parts of the country can be extracted from the records of the monastic houses. T. Bedford Franklin, *A History of Scottish Farming* (Nelson, 1952), makes use of this material, most of which is printed in the various cartularies,² though a certain amount is still unprinted.³

There are, however, regions for which material of monastic origin does not exist, either because there were no religious houses there or because houses existed for which no records have survived. It may, further, be taken as generally true that there are no records of lay landlords comparable to those of the ecclesiastical estates, and such information as is available about tenants, services, and holdings on lay estates can be obtained only from charters and similar documents among private muniments.⁴

The one important source from which supplementary information can be obtained for the late medieval period is the *Exchequer Rolls of Scotland*. These records, relating to the income of the Scottish crown, are in print down to 1600, but remain among the least exploited of the Scottish printed records. Being the record of the crown revenues, they state the income derived from the crown lands, which extended from Ross and Orkney in the north to the Borders in the south, and which included a great variety of types of land, including some in the west, like Kintyre and Bute. They touch on

¹ I am very greatly indebted to Mr J. D. Imrie, an Assistant Keeper of the Scottish Records, for the help he has given in the preparation of this article, the substance of which was read at the Conference on Scottish Agricultural History in Edinburgh, 26 September 1959. The sources mentioned are, except when otherwise indicated, in H.M. General Register House, Edinburgh. For detailed descriptions of them, see M. Livingstone, *A guide to the public records of Scotland*, 1905, and 'Accessions of public records to the Register House since 1905', in *Scot. Hist. Rev.*, xxvi, pp. 26-46. Reference may also be made to J. M. Thomson, *The public records of Scotland*, 1922.

² For lists of the printed cartularies, see *Sources and Literature of Scots Law*, Stair Soc., 1936, pp. 260-1, and G. R. C. Davis, *Medieval Cartularies of Great Britain*. There is similar material in *Melrose Regality Records* (3 vols., Scot. Hist. Soc.).

³ e.g., there is material relating to Scone in the possession of the earl of Mansfield.

⁴ As mentioned below (p. 87), many of these muniments are now in the Register House. Attention should also be drawn to the Register House Charters, a large collection, formed artificially, beginning in the twelfth century and calendared to 1600, with indexes of persons and places.

parts of the country for which the monastic records are silent, and the area covered is broad enough to allow of comparative figures for different regions. Primarily, the material consists of statements of the rents of the crown lands, showing the produce in some detail. The MSS. include nine volumes of rentals, of dates from 1476 to 1588 (included in the printed volumes), which show how the lands were let to tenants, on what terms, the extent of the holdings, and the sums paid in rents. As the series of rentals is consistent for a period of more than a century, sustained study is possible. There are also inventories of stock, and occasionally some items which present a vivid picture of the management of land in the fifteenth and sixteenth centuries.

Some examples may be given. We find in 1499 how the Grange of Bothkennar, containing 27½ oxgangs, was let to eleven tenants, with holdings ranging from one to four oxgangs,¹ and we find in 1502 how the lands of Wester and Easter Ardet were let to fifteen tenants for various money rents along with 'carriages' and other services.² An account of the Grange of Darnaway, in 1505, shows that there were 11 stacks of oats, out of which payment of oats was made to the ploughman, the shepherd, the watchman, and so forth; there were five stacks of bear and two and a half stacks of wheat (the other half of one stack being made up with oats); in five ploughs there were fifty oxen; there were cows, stirks, and a bull, 116 ewes, 42 wedders, 64 hogs, and nine year-old sheep.³ The account of the chamberlain of Glamis in 1538 shows that 12 oxen were purchased to plough the lands of Glamis and Baikie.⁴ The accounts of the chamberlain of Galloway in 1456, relating to the Grange of Sannik, record the crops of oats, bear, and wheat, the payments to labourers, and the cost of horses for such operations as threshing and harrowing.⁵ In the accounts of Menteith for 1508 we see what looks like an attempt to improve stock, for nine white cows and a bull were to be purchased and pastured in the new park of Stirling.⁶

There are also in these records regulations to ensure good husbandry. Thus in 1541 the following conditions were to be inserted in grants of lands in Fife and Strathearn: each tenant had to build a substantial house, consisting of a hall, chamber, pantry, kitchen, and other office houses, with barn, byre, and dovecote; he was to have a good large yard, well dyked, and planted with hawthorn or alder; he was to plant a specified minimum number of trees, so that the yards might be completely encircled; hemp and lint were to be sown outside the kailyard and not within it; alder, willow, and hazel were to be planted in bogs.⁷ Again, entries relating to 'steelbow' tenancies record

¹ *Exchequer Rolls*, xi, p. 409.

² *Ibid.*, xii, p. 640.

³ *Ibid.*, pp. 672-3.

⁴ *Ibid.*, xvii, p. 143.

⁵ *Ibid.*, vi, p. 206.

⁶ *Ibid.*, xiii, p. 60.

⁷ *Ibid.*, xvii, p. 719.

the stock provided by the landlord to his tenants, and the remissions of rent sometimes noted allude to adverse conditions caused by flooding, drifting sand, and civil disorder.¹

Apart, however, from the information to be derived from the *Exchequer Rolls*, it seems very doubtful if much can be found for the medieval period which has not already been used. But that period we may take as ending in the sixteenth century, roughly with the reformation. Thenceforward, in the late sixteenth century and the seventeenth, we enter on a period of which little investigation has been made and which most accounts of Scottish agriculture ignore—a period which ends only when it becomes possible, in the eighteenth century, to take up the tale of the improvers.

The main task should be to try to fill in that gap, and the relevant material is to be found in three main sources: (1) the records of testaments; (2) court books; and (3) estate papers.

THE RECORDS OF TESTAMENTS

These records are extant from dates before 1600 for several parts of the country, although there are other areas, notably Aberdeenshire, where they do not begin until very much later. It must be explained that a 'testament' does not imply the existence of a 'will'; only if it is a 'testament testamentary' is there a will, otherwise it is a 'testament dative'. But the important element in either type of 'testament' is the existence of an inventory of the movable property—"goods, gear, debts and sums of money"—of the person deceased, and it is those inventories which are of importance to the student of agrarian history as of social history generally. It should also be emphasized that testaments are to be found for persons at every level in the social scale, from the very rich to the very poor.

Two examples of inventories may be given, taken quite at random. Thomas Stalker of Easter Drylaw, who died 3 January 1584, had 11 "draw-and oxin," valued at £10 13s. 4d. each; six cows at £6 13s. 4d.; 60 sheep at £1; four horses at £13 6s. 8d.; six young cattle at £2 13s. 4d.; 18 bolls of wheat sown on his land—which, "estimated to the fourth corn" or valued in terms of a four-fold return, was assessed at 72 bolls at £3 a boll; and in his barn he had 24 bolls of wheat at £3 10s., 48 bolls of bear at £2 13s. 4d., 100 bolls of oats at £2, and 30 bolls of pease at £2 13s. 4d. David Mure in Bordland, who died 9 January 1583, was a much less substantial man, with three cows at 8 merks, 2 oxen at 10 merks, four young cattle worth in all £8 6s. 8d., eight hogs at 13s. 4d., a nag and a mare worth together 22 merks, and in his

¹ There is similar information about adverse conditions in the Accounts of the collectors of thirds of benefices, beginning in 1561 (printed down to 1572 by the Scot. Hist. Soc.).

barn 21 bolls of oats at 33s. 4d. and three bolls of bear at £2. Sometimes the list of possessions includes references to implements, e.g., cart wheels with "corn" bodies and "muck" bodies.

It is obvious that an analysis of a batch of testaments from the same parish or other small area would give a fairly accurate picture of the distribution of crops, of the balance of stock between cattle and sheep, and of the sources from which wealth was obtained in the Scotland of the period. There are quite sufficient inventories—hundreds and sometimes thousands for each generation in each area—to make it possible to work out reliable averages and standards. And, apart from information about the general picture, there are many incidental details which may emerge from the study of testaments. The size of a stack may be indicated, when we are told that two stacks of bear were estimated to contain 90 bolls; attention to the dates of deaths and the particulars about crops "sown on the ground" and "in the barn and barn-yard" would disclose dates of sowing and harvesting; there are references to different types of oats—white oats, black oats, and "small hieland aittis." Any testament gives a general indication of the character of the deceased's farm and the relative importance of cultivation and stock-raising. Not the least important feature to emerge—though it is perhaps relevant to general social history rather than to agrarian history—is the extent to which agriculture was practised by the inhabitants of Scottish burghs, many of which were no more than villages and the inhabitants of which were often smallholders. For example, a burghess of Montrose had shares in two trading vessels and a fishing boat, but also possessed three bolls of wheat and three bolls of bear sown on the burgh roods of Montrose, along with a cow, a calf, and a quoy. In somewhat similar fashion, the rural clergy invariably had cattle and crops which formed an important proportion of their substance.

COURT BOOKS

These books are mainly the records of the sheriff, regality, and barony courts¹ (though, for reasons just mentioned, burgh court books are not to be ignored for agrarian history). Any one proposing to use those records for agrarian history must be warned that, while they do contain important material for his purposes, they also contain an inordinate amount of material which will be to him of no value or interest whatsoever. The student whose interests lie in the more general aspects of agrarian history would probably be justified only in making use of such court books as are available in print.² The

¹ For a list, see *Sources and Literature of Scots Law*, pp. 117–32.

² e.g., J. A. Symon, *Scottish Farming*, uses the *Court Book of Urie*, published by the Scottish History Society.

labour of working on MSS. would be justified only for an intensive study of local conditions.¹

From their nature, the court books inevitably throw a good deal of light on the relations between landlord and tenant, in connection especially with labour services, which it was sometimes the business of the court to enforce. The court was much concerned with the manifold matters which can be included generally under the heading of 'good neighbourhood', such as the maintenance of dykes and gates, disputes over boundaries, quarrels over peat-rights, the control of stock, the destruction of vermin, the marking of sheep and cattle, and the misdeeds of sheep-dogs. Sometimes proceedings arising from such matters disclose details which help to round off the picture: for example, in the *Barony Court Book of Carnwath* (Scot. Hist. Soc.), we find that some persons accused a man of "castin peits [cutting peats] in thair meadow and spreid them in thair unmawin meadow"—an incident which throws some light on the poor quality of the soil in land used as a meadow where the grass was to be mown; in the same volume, proceedings are recorded against a man for destroying green wood (a common offence, for which the death penalty was imposed), and he is said to have been cutting "wands" and to have had "twenty wands under his oxter [i.e. armpit]"; in the *Court Book of Balgair* (Scot. Record Soc.) there are several references to the payment of 'tod cess', a levy to pay for the destruction of foxes; and in the *Court Book of Shetland* (Scot. Record Soc.) there are acts to encourage the destruction of "earns and corbies," that is, sea-eagles and ravens.

More strictly criminal matters, likewise recorded in court books, sometimes yield incidental information. Thus, the quantities of produce stolen give some indication of the scale of production: e.g. 20 stones of butter and cheese, which seem a considerable quantity, were stolen from a single tenant in Glenelg. Cases of assault, again, give incidental information about implements and about agricultural operations: e.g. there is a case in the *Melrose Regality Records* where a plough was stopped by striking and beating the horses.²

In the general run of civil cases, the proceedings may disclose information about the quantity of seed sown on an acre, the size of individuals' holdings, and of course the prices of grain and the value of crops. About the value and

¹ For an example of the use of a court book for a local study, see G. Donaldson, *Shetland Life under Earl Patrick*.

² Similar evidence emerges from the *Privy Council Register*, which is mentioned below (p. 89). Selections from the records of the central criminal court, the Court of Justiciary, are printed in Pitcairn, *Ancient Criminal Trials*, 3 vols., Bannatyne Club, 1833, *Selected Justiciary Cases*, Stair Society, 1953, and *Records of the Proceedings of the Justiciary Court*, 2 vols., Scot. Hist. Soc., 1905.

yield of crops a good deal of information should be derivable from cases concerning teinds (*anglice* tithes), but as the records of the Teind Office were destroyed by fire in 1700, such cases are not extant in very great numbers. Sheriff court records may include "fiars' prices," giving the selling price of grain year by year.¹

Special mention should be made of proceedings relating to the division of commonry. When we reach the eighteenth century, sheriff court records may show cases of the consolidation of holdings and of the supersession of the run-rig system, as well as of the division of common grazings among tenants. But divisions were not unknown in earlier times. They could be made in the seventeenth century by contracts of division, with consent of the superior.² But it may be that, even earlier, court proceedings would disclose similar transactions: certainly in the Court Book of Orkney and Shetland for 1612-30 it is recorded that James Sinclair and Elizabeth Spence appointed four persons to designate two merklands out of the lands of Buay, to be enjoyed by the said Elizabeth heritably, "als mekill in quantitie and qualitie . . . as the twa merk uthall [i.e. udal] landis quhilkis lay rig and rendall [i.e. run-rig] of befoir with and amangis the said James landis of Bua."

ESTATE PAPERS

Some of the private collections of papers which have been surveyed and recorded either by the National Register of Archives (Scotland) or by other agencies are still in the hands of the owners, others are deposited in the Register House. The general situation is that a substantial body of material for agrarian history does not exist for the period before 1700 and that detailed rentals, estate papers, and farm management records of earlier dates are rare. There are, however, certain exceptional collections, in which there is some material of this kind for at least the seventeenth century. The following examples may be given, all from collections in the Register House.

The Ailsa Papers (Ayrshire) contain some seventeenth-century rentals and a fine series of tacks [leases] from c. 1620.

The Breadalbane Papers (Argyll and West Perthshire) contain rental material from the late sixteenth century, and for the seventeenth century there are store books, giving particulars of holdings of cattle, sheep, and goats, chamberlains' accounts, and registers of tacks.

The Dalhousie Collection (Midlothian and Angus) contains some sixteenth-century rentals and many of the seventeenth century, a very large number of tacks from about 1610 onwards, factors' accounts from 1612,

¹ The Haddington fiars' prices from 1647 are printed in J. A. Symon, *op. cit.*, App. III.

² *Melrose Regality Records*, III, pp. xv, xx, 8.

grieves' accounts from 1650, and notes and accounts relating to the employment of harvesters and other labourers. This collection seems to be one of outstanding importance in this respect.¹

Legal papers in several private collections throw light on agricultural conditions. Precepts of removing give names and numbers of tenants in particular lands. There may also be building contracts. In 1587 a contract between the countess of Erroll and a tenant in Ardriffie stipulated that the latter should build a house 82 feet long and 19 feet broad, the walls to be 3½ feet broad and 3 ells high with two 'rounds' on the side for passages to lofts, two mid-walls, and four plaster walls on the gables and the said mid-walls (Erroll Charters, no. 1162).

Unfortunately farm and estate plans are not found until the eighteenth century, but these often represent conditions that had obtained for a long period before. A book of plans of farms on Eglinton estates in Ayrshire and Renfrewshire, drawn in 1789, has water-coloured representations of farm buildings which often show the ruins of older buildings.

OTHER SOURCES

It is noticeable that in several collections a series of tacks begins in the course of the seventeenth century. The very important subject—highly relevant to agrarian history—of the structure of the system of land tenure, can be only imperfectly explored in earlier periods. Yet there is some important material for the sixteenth century, well worth examination, contained among the very ample records relating to the conveyance of land in heritage—charters in private collections and the crown grants recorded in the *Register of the Great Seal*. (It should be noted, too, that a certain number of tacks of crown lands are recorded in the *Register of the Privy Seal*.) With the beginning of the seventeenth century there is a complete and consistent record of all heritable conveyances of land, in the Register of Sasines, from which the history of any piece of land in Scotland can be continuously traced and which could be used to show the changes in the composition of the land-owning class, the accumulation and breaking-up of estates, and the extension or contraction of the class of owner-farmers.

The process of feuing, or letting land in perpetuity for a fixed payment, had apparently been not unknown in church lands at a fairly early date, but its principal development in the fifteenth century was in the crown estates. It is important to determine how far crown lands were feued, in small lots, to actual farmers (who thus gained security of tenure) and how far in larger

¹ I am indebted to Mr P. Gouldesbrough, an Assistant Keeper of the Scottish Records, for drawing my attention to this collection.

holdings to men who would in turn lease smaller holdings to working tenants. Then in the sixteenth century, for reasons arising from the reformation, there was a rapid development of the feuing of church lands, and, as these feus were very often confirmed by the crown, they are recorded in the *Register of the Great Seal* and in a special Register of feu charters of kirklands (MS). It was a persistent complaint at the time that these ecclesiastical feus were too often granted, for a large lump sum and a small perpetual duty, to middlemen who proceeded to recoup themselves by rack-renting or evicting the old tenants. Yet a casual examination of the records shows that feus were, in fact, quite frequently granted to the existing tenants. The extent to which this applied is a subject which requires study, and probably if the material contained in the monastic cartularies were used in conjunction with the information supplied by the confirmations of feu charters it could be determined how severe the dislocation was which arose from the feuing of the church property in the sixteenth century.

While the sources already described are those to which it is most desirable that attention should be directed, there are other sources which are not to be ignored, and as many of them are printed and indexed, the incidental references to agriculture which they contain can be easily traced. Legislation is to be found in the *Acts of the Parliaments of Scotland*, which have an excellent index. There were many statutes which are at least indicative of good intentions, such as one of 1426 ordaining that every man tilling with a team of eight oxen should sow yearly a firloft of wheat, half a firloft of pease, and forty beans, and two (in 1501 and 1581) designed to protect from distraint a tenant's oxen and horses and other goods pertaining to the plough, besides many enactments intended in one way or another to promote good husbandry and protect crops from damage.¹ The privy council was another source of legislation, and the manifold acts in its voluminous *Register* (printed to 1689) often touch on matters relating to agriculture, while the council in its judicial capacity heard both civil and criminal cases. In 1579 a complaint came to the council from a man who had suffered through the slaughter of "horses that laboured the ground" and six oxen "gangand in his pleuch," as well as injury to his two ploughmen; the incident occurred in Midlothian, and the complainant observed that it was scandalous that such a thing should happen "in a cuntrie quhilk sould be peciabil, sa neir the seat of justice," although no better could be expected in "the far Hielandis and Bordouris."²

The accounts of the lord high treasurer (printed to 1566), the accounts of the comptroller, and the royal household books record expenditure on

¹ See the list of statutes in J. A. Symon, *op. cit.*, App. II.

² *Register of the Privy Council*, III, pp. 109-12.

supplies for the royal table, and some private collections include household books which give details of the consumption of farm produce: e.g., in the Breadalbane collection there are household account books from 1582. *The Household Book of Lady Grisell Baillie, 1692-1733*, was printed by the Scottish History Society. Such material lies on the boundary between agrarian and social history, and the same may be said of population records. There is nothing resembling census returns before the eighteenth century, except the poll-tax and hearth-tax records which exist for certain parts of the country in the 1690's. Resort may be had to the Registers of baptisms (which are in the custody of the Registrar General in the New Register House), but these exist for very few parishes before 1600 and not for by any means all even by 1700.

Finally, there are the voluminous records of the central civil court, the Court of Session, consisting of the original processes, the Acts and Decrees, and the Register of Deeds. It may be presumed that these contain relevant material, but the lack of indexes and other guides makes them virtually inaccessible.

It can be readily observed that, while the sources are numerous, few of them furnish anything in the nature of a corpus of material. And while diligent search may elicit a fairly complete picture of some aspects of the material situation and development, there is a dearth of the correspondence, memoirs, and treatises which would give an insight into the motives and plans of Scottish agriculturists. The contrast is very sharp with the position after 1700, when consistent series of records become available and a great deal was written by contemporaries about their opinions and policies.

Notes and Comments

EDITORIAL

With the co-operation of our excellent printers this REVIEW has been published at tolerably regular intervals ever since its foundation, the only exception being the second part of Vol. VII, which was held up by the printing strike last summer. The editor and the executive committee have prided themselves on this relative punctuality, especially when they compare it with the record of some other learned journals. But there is another side to the picture. Since the task of editing has to be carried

out in the intervals of a working life which most people would consider sufficiently well filled without it, unsolicited articles cannot be dealt with as promptly as they deserve to be. The editor tenders his apologies to intending contributors whose articles have to be kept in cold storage for what may seem an undue length of time. Having said this, he feels impelled to add that his task would be much easier if writers took a little more trouble to prepare their copy in accordance with the

(continued on page 102)

Selion Size and Soil Type

By H. M. CLARK

IN recent years the work of Professor Beresford has shown, from comparisons of strip maps with aerial photographs of the same areas, that ridge and furrow may be equated, under certain reservations, with the 'lands' or 'selions' of the former open fields.¹ It has, therefore, become possible to use air photographs together with documentary evidence to throw light on open-field farming.

The frequent use of air photographs as illustrations may perhaps have drawn attention to a point which has not so far received much notice. In many of these photographs the ridge and furrow rises and falls with monotonous precision, with apparently no variations in width to interrupt its regularity. In others, however, one or more ridges of noticeably greater or less width than the general are abruptly interspersed. Alternatively, the general width in one area varies widely from the general width in another. Dr Mead in his investigation of Buckinghamshire ridge and furrow found widths varying from 4 to 18 yards, with 9-10 yards as the most common. This variation in the size of selions is in any case familiar from documentary sources.

The varying size of selions or lands has been explained by the Orwins as a consequence of soil type.² In ideal conditions on a flat field with a light soil,

¹ M. W. Beresford and J. K. S. St Joseph, *Medieval England: An Aerial Survey*, 1958, pp. 21-40.

I have throughout this article used the terms 'selion' or 'land' for the basic unit of ploughland, or the single ridge, and 'strip' as the term for the unit of tenure in one place, which might contain one or more selions. This in spite of the plea for a revised terminology made by Professor Beresford, who suggested 'strip' for the single ridge, and 'block of strips' for the unit of tenure (*Economic History Review*, N.S., VII, 1955, p. 392). I have done so partly because it is essential to have two terms in frequent use in order to avoid confusion between the two concepts, and 'block of strips' seems a little cumbersome. It also seemed to me that if the revised terminology were adopted, the 'strips' of 'strip' maps would automatically be taken to represent individual ridges. In fact 'strip' maps fall into several categories: some show individual selions and give an indication of the tenure of each; some show units of tenure with an indication of the number of selions within each; and some show units of tenure with the acreage of each and no indication of the number of selions involved. The four maps published to accompany Vols. II and III of the *Quarto Memoirs of the Bedfordshire Historical Record Society* illustrate all these types. The kind of difficulty that arises from the confusion between them was found by Dr W. R. Mead, who compared a strip map showing units of tenure in Soulbury with ridge and furrow on the ground, and found that the two did not correlate.—*Geographical Journal*, CXX, 1954, pp. 34-42.

² C. S. and C. S. Orwin, *The Open Fields*, 1954, pp. 34, 43, 101.

the width of a ridge would not exceed 22 yards, because this is the distance at which it becomes uneconomic for beasts to traverse the top of the ridge each time in order to plough down the other side. On heavy, poorly drained soils, on the other hand, it might not exceed three yards, because the ridge should be much narrower to allow for better drainage off each 'top'. So the width of a land is dependent on the nature of the soil, which dictates the desirability of frequent or infrequent drainage, and also the ease with which it can be ploughed, and so the size of the unit which can most conveniently be ploughed.

This explanation seems to be generally accepted. It was not possible to test it until soil maps became available to local historians, and the first of these, of Wem in Shropshire, only appeared in 1954. During work on the field system of Longstanton, Cambridgeshire, I examined the correlation of the soil type with the selion size given in terriers. Single selions were of widely differing areas from $\frac{1}{8}$ to 1 acre, with the half acre predominating over the rood selion as the commonest unit of plough.¹ Air photographs showed ridge and furrow of a maximum width of 16 yards and a minimum width of 5 yards. According to the Orwins' theory, the narrower ridges should have been on the heavy, poorly drained clays, which are well represented in Longstanton, and the wider ridges on the imperfectly or freely drained sandy clay loams developed on the valley gravels on which the village stands. In fact, a comparison with the incomplete soil survey map of the parishes showed that no such correspondence existed.

It therefore seemed worth while to undertake a detailed examination to test the generalization in another region. The work of the Soil Survey of England and Wales still covers only a very small part of the former open-field zone,² and not all of the third edition sheets now being issued are based on mapping on the scale of six inches to one mile. Moreover, sheets appearing from now on, in the seventh edition, will mainly be mapped on a reconnaissance basis, so that any extensive field-by-field comparison of pre-enclosure parish land utilization and soil-type will be impossible. This is a disaster for the local historian, to whom large-scale soil maps would be invaluable.

The present survey of ridge and furrow was limited, then, to the few open-field areas for which six-inch soil maps existed, and I could not choose a region where little arable farming had taken place since enclosure, which would have been ideal for such a study. However, the parishes of Breadsall, Spondon, Mackworth, Markeaton, and Allestree, near Derby, were covered

¹ Cambridgeshire Record Office, R.56.5.85; R.52.18.86; R.52.18.85; R.52.18.90.

² Agricultural Research Council Soil Survey Research Board, *Soil Survey of Great Britain*, Report No. 11, 1958.

by a six-inch soil map, and proved to have enough pre-enclosure ridge and furrow to justify investigation. I also carried out more cursory investigations in the parishes of Ockbrook (enclosed in 1772) and Hopwell immediately east of Spondon, and Woughton-on-the-Green (enclosed in 1768) and the Brook End of Shenley (enclosed 1762) in Buckinghamshire, both of which were partially covered by a six-inch soil map.

Much enclosure in Derbyshire took place in the eighteenth century. The three manors of Allestree, Markeaton, and Mackworth, which made up the estate of the Mundy family, were enclosed in 1760 by an owner anxious to apply the methods of the New Farming,¹ but enclosure in Breadsall did not take place until 1815. The only Act surviving for Spondon, on the other hand, deals with under 200 acres, not including open-field arable, in 1792, and the very striking strip-like configuration of the fields round the village suggests much earlier enclosure. The only strip map which survives is that dealing with Allestree manor, and this satisfactorily confirms that the surviving ridges are pre-enclosure. Elsewhere, no ridge and furrow was worked on which could not be shown on the ground to ante-date the existing hedge pattern.

The principal mapping unit employed by the Soil Survey is the "soil series" which is defined as "a group of soils with similar profiles derived from similar material under similar conditions of development."² In the parishes under consideration, the soil series were derived from the Upper Carboniferous beds of the Millstone Grits, the Coal Measures, and the Triassic sandstones and marls, which to the east and south of Derby lie unconformably on the Carboniferous, together with some Triassic and Carboniferous drifts. The only points with which this study are concerned, however, are the differing drainage and texture of the various soil series, since it is the drainage and texture which should affect the size of the selion. The drainage and texture of the soil series is in no way related to the age of the parent material, but only to its chemical and physical composition. The soil represented may then be tabulated as shown on page 94.

Each parish provided examples of contrasting soil type both within itself and when compared to the other parishes. Mackworth and Markeaton contained the largest area of freely drained soil, but considerable outcrops of Hodnet

¹ Derby Borough Library, Derbyshire Collection Nos. 9354, 9743.

² The material of this and the following paragraph is taken from the manuscript of the memoir on the soil map (Sheet 125, Derby). I am particularly indebted to Mr E. M. Bridges for allowing me to use in this paper manuscript material both from the map and the memoir, as well as for his help and criticism. I am also indebted to Mr R. S. Seale, Mr C. A. H. Hodge, and Mr D. W. King of the Soil Survey, who have put much time and information at my disposal.

<i>Drainage Class</i>	<i>Soil Series</i>	<i>Texture</i>	<i>Parent Material</i>
Free	Kirkby Overblow	Sandy loam or loamy sand	Millstone Grit s.s.*
	Seacroft	Fine sandy loam	Millstone Grit or Coal Measures s.s.
	Bridgnorth	Medium grained sandy loam	Bunter s.s.
	Bromsgrove	Fine sandy loam or silt loam	Keuper and Bunter s.s.
Free to Imperfect	Hodnet	Silty loam or fine sandy loam	Interbedded Keuper s.s. and marl
	Risley	Sandy clay loam	Sandy and gravelly drift of Triassic origin
	Worcester	Silty clay loam	Keuper marl
Imperfect	Alton	Silty clay loam overlying shales	Limestone Shales
Poor	Windley	Silty clay loam overlying silty clay	Limestone Shales
	Hazlewood	Silty clay loam over clay	Millstone Grit Shales
	Hulland Ward	Sandy clay loam or silty clay loam	Mixed drift of Carboniferous and Triassic origin
	Dale	Silty clay loam	Coal Measure Shales

* s.s. = sandstone

and Worcester series lay next to the Bromsgrove series, and in the north of Allestree, the old Duffield Field lay on the Windley series. Breadsall had patches of Bromsgrove, Bridgnorth, and Kirkby Overblow series, but the poorly drained soils were much more strongly represented by the Dale, Hazlewood, and Hulland Ward, and the intermediary groups also appeared. Spondon provided the strongest possible contrast to Mackworth and Mark-eaton, the largest part of the parish lying on the Hulland Ward, but the Hodnet, Worcester, and Bromsgrove series also appeared, chiefly to the north of the parish. Ockbrook and Hopwell, immediately to the east of Spondon, lay almost entirely on free to imperfectly drained soils, with very small areas of the freely drained Bromsgrove series. The surveyed areas of Shenley Brook End and Woughton-on-the-Green were entirely covered by the poorly drained Hanslope series, developed from the Chalky-Jurassic

Boulder Clay, and the provisionally named Oak series developed from Jurassic Boulder Clay.

Investigation showed first that abrupt changes in selion size and width of ridge took place on the same soil series. The range of widths found in all the parishes varied from 11 to 4 yards, and on the Bromsgrove south of Mackworth widths from 11 to 5 yards were found. There were sudden variations from an average of 8 or 9 yards to small groups of ridges 5 yards wide and, in one case, the opposite. Similarly, on the single patch of Dale, ridges 5-8 yards wide were found. It seemed possible then that although the local variations could not be ascribed to soil type, the general tendency might be for ridges to narrow on the Hodnet and Worcester series (Fig. 1).

When, however, the small area of Allestree which suburban development has left uncovered was examined this general tendency in favour of the

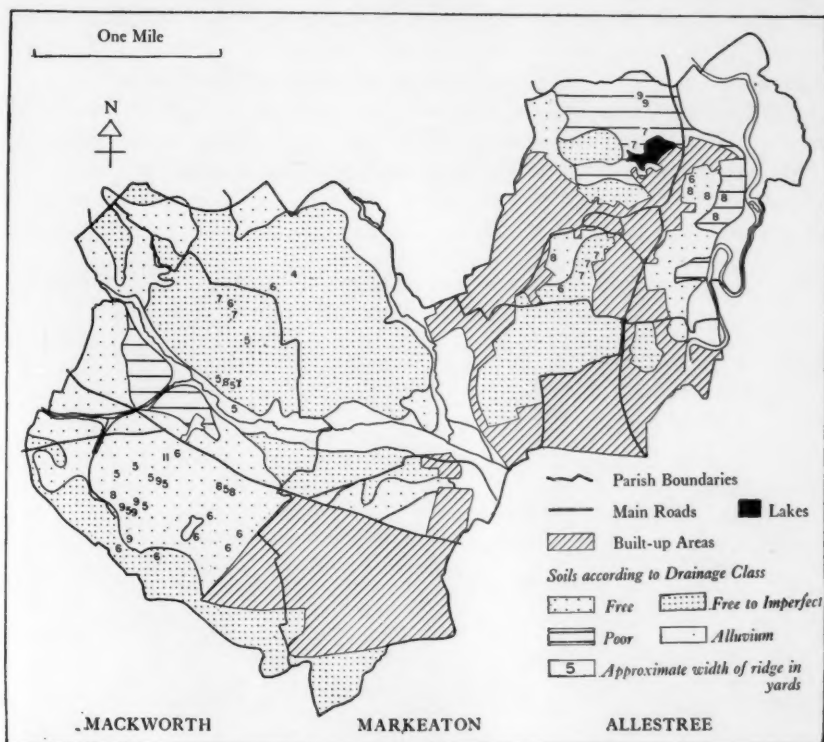


FIG. 1

Orwins' theory seemed refuted. Ridges 6 and 8 yards wide were found on the freely drained Bromsgrove, ridges 7, 8, and 9 yards wide on the poorly drained Windley. Similarly, in Breadsall, ridges 5 and 9 yards wide were found on the Bromsgrove and ridges 5, 6, 7, 9, and 11 yards wide on the Hulland Ward, Hazlewood, and Dale series (Fig. II).

Particular attention was paid during the field work to angle of slope, since obviously a steeper angle might compensate a poorly drained soil with better natural run-off, and so lead to wider ridges than might otherwise be the case. In most cases ridge and furrow lay up and down the slope, and so sudden variations in the widths could not be ascribed to slope. Where this was not so, particularly in Breadsall, which lies at the confluence of two brooks in valleys with sides rising some 100 feet, and also includes the scarp of the Derwent river-terrace, there appeared to be no correlation between steeper slopes and wider ridges on poorly drained soil. The narrowest ridges, of five yards, on the Hazlewood, lay on the steepest part of the slope nearest the Ferriby Brook. As the slope levelled off upwards, the average width of ridge rose. The 9-yard ridges on the Hazlewood lay on an almost level field.

Examination of Spondon appeared to disprove that any general tendency existed in the group of parishes towards narrower ridges on heavier soils (Fig. III). Immediately north of the village, on the Hulland Ward, the average width of ridge was 9, 10, or 11 yards, with isolated examples running up to 12 yards. The fields are low-lying, and have not much surface slope. On a

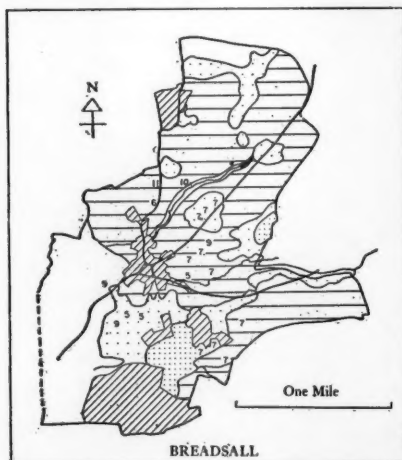


FIG. II

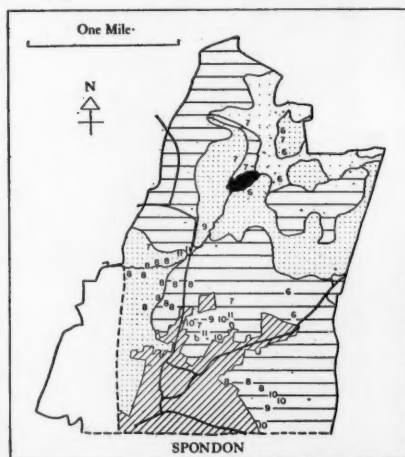


FIG. III

poorly drained soil, with little natural run-off, a rather greater average width is obtained than on a freely drained soil in an area with greater surface slope south of Mackworth. Elsewhere in Spondon, narrower ridges are found on the Hulland Ward, but the general average only falls noticeably in the north on the imperfect to freely drained soils. This fall is continued on the free, or free to imperfectly drained soils in Ockbrook and Hopwell, where the general range was from 7 to 5 yards. The classic theory is thus reversed.¹

Work in Buckinghamshire was inconclusive. Ridges tended to be wider in Shenley Brook End and Woughton than in any of the Derbyshire parishes except Spondon, from 8 to 10 yards. There were few abrupt local variations, except for one small area of ridges approximately six yards wide in Shenley. Outside the part of Shenley covered by the soil survey, ridge and furrow did exhibit sudden changes from 10 to 5 yards, but no useful observations could be made on this in the absence of a soil map, although the Hanslope is said to outcrop consistently over the whole region. It seems then that here the width of ridge is almost as unvarying as the soil types, and all that can usefully be said is that the ridges in these two parishes on poorly drained soil are often wider than on the areas of freely drained soil examined in the Derbyshire parishes.

This survey shows, first, that in two Cambridgeshire and seven Derbyshire field systems, local variations in the width of ridge and furrow are not caused by variations in soil type, and secondly, that there does not appear to be a tendency towards narrower ridges on poorly drained soils, although much more extensive field work would be needed to establish the second point with certainty.

Conclusions based on so small a region must necessarily be extremely tentative, and can only apply to the region itself. It is not, of course, surprising that there is not a minute correlation between the width of selions and soil type; to expect this is to expect a remarkable degree of sensitivity and science from the Anglo-Saxon peasant or his predecessors in the process of laying out lands at the first clearance. What one would expect are certain changes in selion width from area to area of the open fields where soils vary widely, as the limitations of environment made themselves so strongly felt that custom and habit became aware of them and made conscious steps to meet them. On the basis of observations made so far, these general changes did not take

¹ The air photographs on which these conclusions were based were taken from Sortie 58/RAF/1096, Library Number 1438, in the Air Photographs Library of the Ministry of Housing and Local Government. My thanks are due to the Air Photographs Officer for permitting me to make frequent use of the Library, and also to Miss Janet Brice for helping me with the field work which was a necessary adjunct to the use of the air photographs.

place, whereas other local changes apparently unrelated to the environment did. It seems that an explanation for these changes must be sought in custom rather than environment.

It is difficult to account for local custom which leads to an apparently haphazard arrangement of varying selion sizes within the same parish. Two possible explanations which might be explored are that lands may have been laid out irregularly at the clearance, or that the irregularity is connected with the late medieval consolidation of holdings. It is hard to imagine the irregular pattern emerging as a product of co-aration, unless the 'acre', or day's work, represented the individual holding, as is often suggested. In this case the 'strip' must frequently from the beginning have contained more than one selion, since selions even approaching 22 yards in width are so rare. It is just conceivable, then, that an individual might have been able to vary selion width within his own 'acre', originally. As to consolidation, it is true that if the selions of a parish as originally laid out were approximately equal and of a size well below the maximum possible for the environment, consolidation would permit the individual to subdivide further, or to plough two or three as one, at will. Examples of amalgamation and subdivision of this kind have been found at Longstanton and at Mackworth in positions where furlong shape did not demand it, and in which it was an interruption in the common pattern. Such suggestions can only stand, however, until an adequate solution to the problem is found.

Letter to the Editor

SIR,—May I make two comments on Dr Chaloner's review of my book on Dartington Hall? I hold the opinion that I am perfectly entitled to call the book "the history of an experiment," but of course it is also implied that it is the history *so far*. The experiment continues in various forms, not necessarily with the same emphasis, however. Secondly, in the unpublished report, upon which the

book was based, and which I also wrote, complete financial accounts are rendered of every aspect and activity of the estate. For various reasons, it was considered undesirable to publish these, but they are available (subject to the permission of the Trustees) to serious enquirers.

VICTOR BONHAM-CARTER

East Anstey, Tiverton, Devon.

The Long and Short Hundred in Agrarian Statistics

By REGINALD LENNARD

BESIDES the material examined in my article on medieval sheep statistics (AHR VII, 1959, pp. 75-81), a good deal of evidence on the relative frequency with which the long and short hundreds were employed is to be found in the *Inquisitiones Post Mortem* and for the few counties for which these have been published is readily available. It occurs almost entirely in statements about areas of arable which give the value per acre and the total value. Unfortunately the published inquests are given only in translation, and it is just possible that in a few cases the translator may have expressed as a 'hundred' what the original expresses as 'five score'; and such cases would have no bearing on the problem. Some statements too are made useless by discrepancies in the figures due to errors in arithmetic or transcription. Yet a brief summary of the data supplied by documents of thirteenth-century date may be helpful.

1. *Lancashire and Westmorland*. The evidence is very scanty mainly because in these inquests lands are commonly measured in carucates and bovates instead of acres; but these are counties for which I found no evidence at all in my previous article, so it seems worth noting. At Roseacre in Kirkham parish, Lancashire, 215 acres are described as "by the lesser hundred" and valued at £8 19s. 2d. (i.e. ten pence per acre). An inquest of 1298 lists 251½ acres of waste at West Derby "by the long hundred," another 234 acres "by the short hundred," and another 200 acres which the arithmetic shows to have been long hundreds though no statement to that effect is made. The same inquest also uses the long hundred without comment for some land at Wavertree. An inquest of 1247 values 200 acres in Patterdale (Westmorland) at £4: this suggests a use of the long hundred, but one cannot be sure.¹

2. *Nottinghamshire*. Eight cases of the short hundred and two of the long hundred, one of which is described as "of the greater number."²

3. *Staffordshire*. Nine cases of the short hundred and one which is said to

¹ *Lancashire Inquests 1205-1307*, ed. W. Farrer, Lancs. and Cheshire Record Soc., 1903, pp. 266, 285-6, 167.

² *Abstracts of the Inquisitiones Post Mortem relating to Nottinghamshire 1279-1321*, ed. J. Standish, Thoroton Soc., 1914, pp. 21, 33, 34, 61, 79, 81, 173, 176, and for the long hundred pp. 80, 109.

be "by the larger hundred" but actually assumes a five-score hundred in its arithmetic.¹

4. *Worcestershire*. Nine cases of the short hundred, one of the long—also one *probable* case of each.²

5. *Gloucestershire*. Forty-four cases of the short hundred, in two of which (Stinchcombe, 1256; Saintbury, 1300) the figures are stated to embody the "small" or "lesser" hundred. One inquest, of the year 1299, contains four cases of figures which are described as "by the greater hundred" and two (included in the total of forty-four) which employ the short hundred without comment.³

6. *Wiltshire*. Seventy-three cases of the short hundred, in thirteen of which its use is noted.⁴ The long hundred is used (without comment) in one case.⁵

7. *Dorset*. Ten cases of the short hundred, none of the long.⁶

8. *Bedfordshire*. Eight cases of the short hundred (in one of which its use is noted): also six *probable* cases of the same. Two cases of the long hundred, both accompanied by a statement to that effect.⁷

All the above figures are for measures of land: only in four of the counties do the inquests throw any light upon the methods employed in the enumeration of sheep. At Lechlade in Gloucestershire some pasture for 200 sheep is valued (*temp.* Henry III) at 16s. 8d., which suggests a short hundred as the

¹ *Inquisitions Post Mortem etc., Staffordshire 1223-1327*, W. Salt Collections, 1911, pp. 146, 222, 243, 244, 247, 248, 249, 250, and for the alleged 'larger hundred', p. 243.

² *Inquisitiones for Worcestershire*, Part I, ed. J. W. Willis Bund, Worcestershire Hist. Soc., 1894, pp. 16, 20, 26, 31, 42, 56, 60, 61, 62, 64, and for the "probable" cases, pp. 33, 55.

³ *Inquisitiones Post Mortem for Gloucestershire*, Vol. IV, ed. S. J. Madge, British Record Soc., 1903, pp. 21, 27, 41, 55, 61, 92, 96, 102, 103, 123, 124, 132, 133, 135, 137, 138, 140, 141, 142, 147, 148, 150, 158, 168, 169, 170, 172, 174, 175, 179, 180, 181, 188, 192, 193, 195, 198, 201, 220, and for the last-named inquest, pp. 202-9. A few cases refer to lands outside Gloucestershire.

⁴ *Abstracts of Wiltshire Inquisitiones Post Mortem, 1242-1326*, ed. E. A. Fry, British Record Soc., 1908, pp. 2, 8, 23, 43, 51, 60, 62, 63, 64, 68, 71, 75, 77, 81, 87, 92, 100, 104, 106, 107, 111, 128, 132, 134, 138, 139, 141, 142, 145, 146, 147, 151, 156, 157, 167, 169, 170, 171, 174, 175, 182, 192, 201, 206, 210, 214, 215, 216, 218, 223, 227, 228, 229, 230, 232, 233, 235, 236, 242, 250, 252, 268, 277.

⁵ *ibid.*, p. 245.

⁶ *Dorset Inquisitiones Post Mortem, 1216-1485*, reprinted from *Notes and Queries for Somerset and Dorset*, 1916, pp. 52, 53, 137, 185, 202, 214, 299, 300, 302. This volume is not complete for the county as it is arranged in alphabetical order of the owners and only extends from A to C.

⁷ *Calendar of Inquisitions Post Mortem*, ed. G. H. Fowler, Beds. Hist. Record Soc., v (Part II), pp. 207, 243, 248; xix, pp. 117, 118, 130, 135, 136, 137, 139, 140, 141; and, for the long hundred, v, p. 235; xix, p. 114. The published calendar does not extend beyond the year 1286.

total comes to a penny per sheep on that assumption.¹ In Wiltshire the short hundred is used (without comment) in 18 cases, and in five others the figures suggest its use without proving it.² One Dorset inquest values pasture for 150 sheep at 6s., which might be an approximation, based on the short hundred and reckoning a half-penny per sheep, or else a rough valuation at 4s. the hundred.³ Bedfordshire provides one case of sheep enumerated by the short hundred and that without comment.⁴ In none of the counties is there any certain example of the long hundred in sheep statistics; but its use is suggested by the figures at Fittleton and Mere in Wiltshire and, though certainty is precluded by arithmetical errors, the inquests reveal two other probable cases in this county.⁵ In Dorset, pasture for 200 sheep is valued at 4s. at Steeple, and pasture for 100 is said to be worth 2s. at Child Okeford and 1s. at Iwerne Courtney; but whether these figures imply a six-score hundred or are rough valuations per hundred of five score must be regarded as doubtful.⁶

To sum up: the evidence of these inquests supplements that cited in my former article by showing that there was, perhaps, a tendency to favour the long hundred in Lancashire and that it was used occasionally in several counties where its employment had not previously been noticed. But, apart from Lancashire and possibly Westmorland (for both of which the evidence is very slight), the inquests reveal a preponderance of the five-score hundred which tends to confirm my conclusion that in the west a "hundred" should be understood in that sense unless the contrary appears. It should be noticed that the counties to which this applies now include Staffordshire and Worcestershire—counties previously omitted for lack of evidence.

ADDENDUM. Some evidence for another part of the country is afforded by the Yorkshire Inquisitions published by the Yorkshire Archaeological Association in their Record Series. Thirteen of those of thirteenth-century date contain seventeen clear cases of land measured by the long hundred (I, pp. 48, 143, 146, 192, 240, 242, 247, 255, 259; II, p. 108; III, pp. 57, 68, 100). Only in ten cases, contained in six inquests, is it clear that the five-score hundred was employed (I, pp. 40, 68, 160, 169, 222, 223, 224; III, p. 128). It is, however, remarkable that in six of the former examples the use of the

¹ *op. cit.* (Gloucestershire), p. 55.

² *op. cit.* (Wiltshire), pp. 2, 23, 24, 64, 65, 75, 88, 92, 98, 108, 111, 127, 133, 142, 168, 170, 254; and, for the probable cases, pp. 42, 60, 68, 82, 85.

³ *op. cit.* (Dorset), p. 202.

⁴ *op. cit.* (Bedfordshire), XIX, p. 117.

⁵ *op. cit.* (Wiltshire), pp. 107, 277; also Calstone, p. 77, and, more doubtfully, Cherhill, p. 43.

⁶ *op. cit.* (Dorset), pp. 302, 326, 347.

greater hundred is specifically noted, while the five-score hundred is always used without explanation. The method used in enumerating sheep is only illustrated by a single entry: it includes a statement that the reckoning is by the long hundred (1, p. 41).

NOTES AND COMMENTS (*continued from page 90*)

usages adopted in the REVIEW. It is surprising how many articles are sent in with illustrations or tabular matter that obviously will not fit into our page, and with spelling, punctuation, or style of footnote reference which departs in one or more respects from our established practice.

THE AGRARIAN HISTORY OF ENGLAND

The inception of this great undertaking was announced four years ago in Vol. IV of the REVIEW, and a brief report on progress appeared in Vol. V, p. 11. Since then much solid work has been done, particularly on Vol. IV, the pilot volume, which is being edited by Dr Thirsk and covers the period from 1500 to 1640. It is expected that contributors will begin sending in their copy towards the end of this year. Meanwhile, in order to assist the organization of research for other volumes, the Nuffield Foundation has made a further grant of £12,000 to the University of Leicester, whose Department of English Local History is the headquarters of the undertaking. A number of meetings have been held in London, Oxford, and Leicester, to plan the work on Vols. I, III, and VI, and editors have been appointed as follows: Vol. I, Dr H. P. R. Finberg (general editor of the History); Vol. III, Professor M. M. Postan and Dr R. H. Hilton jointly; Vol. VI, Mr J. W. Y. Higgs.

THE BRITISH AGRICULTURAL HISTORY SOCIETY

The Annual Conference for 1960 was held at Harper Adams Agricultural College, Newport, Shropshire, and was attended by about forty members of the Society. The Conference opened on Thursday, 7 April, with a

tour of the College farm, followed by dinner at which the Society was welcomed by the Principal of the College, Mr W. T. Price, M.C. After dinner a paper was given by Miss Dorothy Sylvester on The Open Fields of Shropshire. On the Friday morning members heard papers by Mr Glanville R. J. Jones on The Pattern of Settlement on the Welsh Border and Mr W. T. Price and Mr T. O. Wilson on Recent Changes in Shropshire Agriculture. In the afternoon Miss Sylvester led a tour of west Shropshire. The Conference concluded on the Friday night with a paper by Mr Michael Madden on Agricultural Trades Unionism in England and Wales.

The chair at the annual general meeting on the Friday morning was taken by the Treasurer, Professor Edgar Thomas. The officers of the Society, namely the President, Sir Keith Murray, the Treasurer, Professor Edgar Thomas, and the Secretary, Mr J. W. Y. Higgs, were re-elected, and to fill the places on the Executive Committee vacated by Miss H. A. Beecham, Mr George Ordish, and Mrs Joan Thirsk, the meeting elected Mr George Houston, Mr W. Harwood Long, and Mrs C. S. Orwin.

In the unavoidable absence of the Chairman of the Executive Committee, Mr George Ordish, its report was presented by Professor Edgar Thomas, who said that in the past year membership had risen from 559 to 586. He also reported on the three conferences in the previous year, including the Scottish Conference held in the autumn of 1959, which was a new venture.

In presenting the Treasurer's report, Professor Thomas explained that the financial

(*continued on page 114*)

Regional Farming in Seventeenth-Century Yorkshire

By W. HARWOOD LONG

THE study of regional agriculture in this country has been handicapped by the paucity of records on peasant farming, which nevertheless represented the typical husbandry of most districts of England until the Hanoverian enclosures. Manorial records relate mainly to the demesne, and although it is known that there were, for instance, concentrations of sheep on some coastal marshes, and that cattle raised on the Welsh hills were already fattened in the English midlands in the sixteenth century, the only source from which a quantitative assessment of differences in farming practice in different districts can be made is the probate inventories which many peasants left behind them with their wills.

Peasants' inventories relate to the period 1530 to 1830, but they were much more numerous in the sixteenth and seventeenth centuries than at any other time. Though they are best used in association with other sources of information for studying the farming of a district, they have the considerable advantage of being almost unlimited in numbers, so that they provide a fairer cross-section of the farming of a district than would be possible by any other means.

The amount of agricultural information contained in an inventory depends on the type of farm, the conscientiousness of the appraisers, and to some extent on the month in which the inventory was made, those made between seed-time and harvest usually providing useful information on cropping which those made at another time of the year necessarily lack. Although more of the inventory is invariably given up to valuing the household goods than the farm stock (which nevertheless usually represent a much larger proportion of the total), considerable information is usually provided under the headings of: Crops (in barn or granary, and growing), cattle, sheep, horses, pigs, poultry, bees, gear, sundries.

In the investigation of seventeenth-century farming which forms the subject of this essay nearly a thousand inventories were examined. Most of them were at the time housed in the Probate Office at York, but those relating to the Archdeaconry of Richmond were in the Leeds City Library. The records for the years 1688 and 1689 or thereabouts easily outnumber those of any other date, and mainly for this reason they were the years selected for study.

Two alternative ways of using these inventories in order to study the re-

gional characteristics of the farming suggested themselves. One was to group together those farms which appeared to show some similarity in system in order to see if they were mostly situated in one part of the county. The other was to group them on the basis of geographical features on the assumption that this would throw up contrasts in the systems. The latter is empirical and, in fact, on *a priori* grounds assumes the result that might be expected. Nevertheless, the physical features of the Yorkshire landscape vary so sharply that it would be surprising if any tendency towards regionalization were not associated with them. Moreover, the Board of Agriculture surveyors for the North and East Ridings, writing only a little more than a hundred years after the period of this study, used the physical features of the county as the basis for studying the farming systems.¹ Both these reasons seemed to justify adopting the same method as a first approach to the present problem, and the records were consequently divided into eight groups, as follows:

Dales. 116 farms. Pennine farms in the North Riding, or northern part of West Riding.

Craven. 95 farms. Farms in the Craven part of the West Riding between the Dales group and the Industrial West Riding group.

Cleveland. 31 farms. Mixed farms on low ground between the Cleveland hills and the river Tees.

North Yorks Moors. 49 Moorland farms between Cleveland and the Plains of York and Pickering.

Wolds. 38 farms on the hills in the East Riding between Holderness and the Plain of York.

Holderness. 79 farms between the Wolds and the sea.

West Riding Industrial. 33 farms in the hills of the industrial West Riding. These holdings were often occupied by weavers and clothiers in what is now the industrial West Riding.

Plain of York. 430 farms, all in the Plain of York.

In all, 997 inventories were extracted, but only 871 of them were suitable for grouping. Those rejected include 83 in which the total valuation was £12 or less. Even at the prices ruling at the end of the seventeenth century a total valuation of no more than £12 seems too low for a holding depending mainly on agriculture, and it was assumed that these were part-time holdings where farming was comparatively unimportant.

At the other end of the scale, some valuations were so high that to include them in a group average might have distorted it. A farm valuation of £400 was made the upper limit. Four farms had valuations that were higher than

¹ J. Tuke, *Agriculture of the North Riding of Yorkshire*, London, 1794, 1800; I. Leatham, *Agriculture of the East Riding of Yorkshire*, London, 1794.

TABLE I
VALUATIONS PER FARM
Eight regional farming groups

	Dales	Craven	Cleveland	North Yorkshire Moors	Wolds	Holderness	West Riding Industrial	Plain of York
<i>No. of Records</i>	116	95	31	49	38	79	33	430
<i>Valuations per Farm</i>	£	£	£	£	£	£	£	£
Hay	4	3	2	$1\frac{1}{2}$	$1\frac{1}{2}$	$4\frac{1}{2}$	$2\frac{1}{2}$	3
Corn	1	7	16	4	54	19	10	$23\frac{1}{2}$
Cattle	20	$27\frac{1}{2}$	29	22	$22\frac{1}{2}$	$33\frac{1}{2}$	21	$24\frac{1}{2}$
Sheep	12	6	6	13	$17\frac{1}{2}$	10	5	$5\frac{1}{2}$
Horses	5	$6\frac{1}{2}$	$9\frac{1}{2}$	$3\frac{1}{2}$	13	$10\frac{1}{2}$	5	$8\frac{1}{2}$
Pigs, Poultry, Bees	—	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	3	1	$\frac{1}{2}$	1
Gear	$1\frac{1}{2}$	4	4	$2\frac{1}{2}$	$6\frac{1}{2}$	$4\frac{1}{2}$	4	5
Sundries	$1\frac{1}{2}$	$\frac{1}{2}$	—	1	1	$\frac{1}{2}$	2	1
TOTAL:	45	55	67	47	119	$83\frac{1}{2}$	50	72
	per cent	per cent	per cent	per cent	per cent	per cent	per cent	per cent
Hay	9.0	5.5	1.8	1.3	1.2	5.4	4.9	4.2
Corn	2.2	12.7	25.1	8.5	45.5	22.7	21.0	32.7
Cattle	44.3	50.0	42.8	46.5	19.1	40.1	42.2	34.0
Sheep	27.0	10.9	8.9	27.3	14.6	12.0	9.5	7.6
Horses	11.4	11.8	14.4	7.4	10.8	12.6	10.1	11.8
Pigs, Poultry, Bees	0.3	0.9	1.0	1.5	2.4	1.2	1.0	1.4
Gear	3.0	7.3	6.0	5.5	5.4	5.4	7.6	6.9
Sundries	2.8	0.9	neg.	2.0	1.0	0.6	3.7	1.4

£400, and they were all discarded. Finally, a few records were discarded for other reasons—usually lack of sufficient data.

The average sizes of the farms in four of the groups—Dales, Craven, North Yorks Moors, West Riding Industrial farms—were approximately the same at about £50 per farm. The Cleveland and Plain of York farms were larger, and the Holderness farms were larger still. But easily the largest farms were on the Wolds, with an average valuation of nearly £119.

The significance of the table so far as system of farming is concerned lies in the percentage distribution of the valuation rather than in its total amount. Every group, except the Wolds, had a larger percentage of its valuation in cattle than in any other item. The Wolds relied chiefly on corn, and in the Plain of York the valuation of corn was almost as high as cattle.

Most inventories gave the numbers as well as the value of the livestock. With some classes, this has made it possible to follow through the livestock

farming in more detail than can be done from the valuations only (Table II). Nearly all records gave sufficient particulars of cattle to compare the numbers of oxen, cows, and other cattle in each group. With horses, the detail was only sufficient to divide them into 'young' and 'old', and with sheep no classification of any sort was possible. Numbers of pigs and poultry were not sufficiently great to justify any attempt at classification.

TABLE II
AVERAGE NUMBERS OF LIVESTOCK PER FARM

	Dales	Craven	Cleveland	North Yorks Moors	Wolds	Holderness	West Riding Industrial	Plain of York
<i>Cattle</i>	no.	no.	no.	no.	no.	no.	no.	no.
Cows	4.6	4.8	6.5	5.0	4.7	6.0	3.9	4.8
Oxen	0.2	1.5	1.5	2.1	2.8	1.9	1.5	2.2
Other Cattle	9.4	8.4	7.9	8.1	5.6	8.6	5.3	6.8
TOTAL:	14.2	14.7	15.9	15.2	13.1	16.5	10.7	13.8
<i>Sheep</i>	54.2	26.7	29.2	72.5	96.3	37.1	19.3	26.2
<i>Horses</i>								
Adult	1.9	2.1	2.4	1.3	4.7	2.9	1.7	2.9
Young	0.7	0.8	1.1	0.7	0.7	0.6	0.2	0.9
TOTAL:	2.6	2.9	3.5	2.0	5.4	3.5	1.9	3.8
Oxen and adult horses	2.1	3.6	3.9	3.4	7.5	4.8	3.2	5.1

The small variation in the total numbers of cattle per farm in each group is an interesting feature of Table II. Except for the small farms in the Industrial West Riding, the range was from 13.1 cattle per holding on the Wolds to 16.5 in Holderness. Large teams of working oxen were seldom encountered, and on most groups the average number of oxen was about two. The Dales group, with very little arable land, however, was very low in its numbers of working oxen; Craven, Cleveland, and the West Riding Industrial farms were all low, which is not surprising taking into consideration the small farms and the system of farming. On the other hand, the average numbers of oxen on the North Yorks Moors group was surprisingly high. The reason is not evident, but it is interesting to note that this was the only group on which the numbers of oxen exceeded the numbers of adult horses.

Since oxen and adult horses are to some extent complementary animals,

their combined numbers probably form the most satisfactory measurement of the strength of the plough teams group by group. This comparison shows larger variations than are revealed by the study of either horses or oxen separately, and indicates a fairly close correlation between power and size of holding (in terms of valuation).

Several groups had a ratio of cows to 'other' cattle of about 1 to 2 which suggests that they followed a system of rearing their own calves without any attempt at buying stores. On the Wolds, however, there were nearly as many cows as young stock.

Variations in the numbers of sheep per farm were much greater than in cattle. The big Wolds farms had the largest numbers, and they were followed by the North Yorkshire Moors group which exceeded the Dales by more than would have been expected from a comparison of the valuations. Compared with these groups there were very few sheep in the Plain of York in spite of its relatively large farms.

There were more horses on the Wolds than on any other group, but relatively little horse-rearing was done on them, judging by the low ratio of young horses. The Cleveland area, on the other hand, had a high ratio of young to old horses, and this suggests that horse-breeding was already a feature of Cleveland farming before the seventeenth century closed.

The only groups in which the valuation of pigs was at all important were the Plain of York, the Wolds, and Holderness (Table III). But even in them less than half the inventories included any pigs at all, or at any rate a sufficient number to justify including them in the valuation.

TABLE III
INVENTORIES SHOWING PIG-KEEPING ON A COMMERCIAL SCALE

Group	Records with:			No. of inventories with 4 and more pigs*	Per cent of total	No. of inventories with 10 or more pigs*	Per cent of total
	No pigs	Pigs	per cent				
Plain of York	292	139	32	39	9	6	1
Wolds	20	18	47	9	24	2	5
Holderness	42	37	47	9	11	3	4

* excluding sucking pigs

Poultry were not quite so unimportant as pigs in the Dales, Craven, and the West Riding Industrial area, but nevertheless only about one inventory in ten recorded any (Table IV). They occur in between about a quarter and a third of the inventories in the Plain of York and Cleveland, and in more than

half those on the North Yorkshire Moors, the Wolds, and in Holderness. The average valuation was about 5 shillings per farm. The maximum was £1, but most groups did not exceed 10 shillings. Except on the Plain of York and

TABLE IV
INVENTORIES SHOWING POULTRY-KEEPING ON A COMMERCIAL SCALE

Group	Records with:			Average valuation	Flocks valued at more than 6s.		Maximum valuation of poultry per farm	
	No poultry	Poultry	per cent		no.	per cent		
				s. d.			£	s. d.
Dales	106	10	9	4 4	3	3		10 0
Craven	84	11	12	5 2	3	3		8 6
N. Yorks Moors	20	29	59	3 1	3	15		10 0
Cleveland	22	9	29	4 6	2	7		8 0
Wolds	16	22	58	4 8	4	10		12 0
Holderness	33	46	58	6 0	18	23	1	0 0
Plain of York	326	104	24	7 9	57	13	1	0 0
West Riding Industrial	29	4	12	4 7	1	3		10 0

in Holderness, there were practically no farms where poultry were kept on what could be regarded as a commercial scale.

Having established that there are some grounds for grouping the farms according to region, it remains to consider whether the eight groups chosen do in fact represent eight different systems of farming or whether more than one of the eight regions followed the same system. Alternatively, do the regional averages conceal two or more systems of farming? Two very similar groups are the Dales and the North Yorkshire Moors. On *a priori* grounds the investigator acquainted with present-day conditions might expect to find a good deal of similarity in their systems, and from the information contained in the table it is apparent that in size and in the distribution of the capital in the inventories the systems were similar. In fact, the only items in which there was a significant variation were in gear and in the proportion of the crops in hay and corn respectively. Both these differences suggest that the greater emphasis on arable farming which is known to characterize the North Yorkshire Moors today was also a feature of farming there 300 years ago.

Two other groups which show a considerable degree of similarity in the distribution of their capital, though not in its total amount, are the Holderness group and the West Riding Industrial group. The Holderness group

relies rather more on crops, sheep, and horses; the West Riding group on cattle, gear, and sundries, but the differences are only slight. It is much less easy to reconcile oneself to the similarity in structure of these two groups than it is to the Dales and North Yorkshire Moors groups. Holderness is a low-lying, heavy land district, now regarded as one of the best in the whole country for arable farming. The West Riding Industrial district is, on the other hand, high-lying, hilly, with a climate which is less adapted for arable cropping than for grass. Today few districts show bigger contrasts than these two. Yet all the evidence in Table I, including the proportion of arable crops to hay in the records that provided this information (91 per cent on both), emphasizes the similarity in the structure of the farming of these two groups. Later tables take this subject further.

However, to study the structure of farming in a region in this way is an empirical approach, and in spite of any characteristics in the farming that it may throw up, it gives no assurance that the group averages are composed of farms each of which follows a system similar to the average, rather than a hotch-potch of farms following two or more systems, with the group average representing the actual farming of no farm (or only a very small proportion of the farms) in the group. When the individual records in each group were scrutinized from this point of view, it rapidly became evident that on most of them only a proportion of the farms exhibited a structure similar to the group average.

This is not altogether surprising. If the farms in a region today are grouped, it is always found that however homogeneous the region may appear to be, a considerable proportion of the farms follow systems which differ markedly from the average. Thus a recent investigation into the systems of farming in the Boroughbridge district of Yorkshire (selected as an area where the farming is as uniform as any in Yorkshire) showed that out of 339 holdings in 29 parishes, 103 are of less than 10 acres, and 18 exceed 350 acres. The number of holdings over 50 acres (178) was slightly greater than the number under 50 acres (161). The systems of farming were studied on the holdings over 50 acres. On 91 of them (51 per cent) the system was based on arable farming (including at least 10 per cent of cash roots), with feeding or rearing cattle, but no dairy herd. The remaining 49 per cent followed a variety of systems, including arable with a dairy herd; non-intensive arable; grass farms with a dairy herd; and grass farms with no dairy herd.¹ As this area had been selected for its relatively high degree of homogeneity, it will be appreciated that considerable variation from the group average on the part

¹ J. B. Butler, *Profits and Purpose in Farming; a Study of Farms and Smallholdings in part of the N. Riding*. Univ. of Leeds, Dept of Agriculture, Economics Section.

of individual holdings must be allowed before the possession of the characteristics of regional farming are denied it. Probably there are reasons for more and wider variations in the systems of farming within a region today than there were in the seventeenth century. The advantages of applied science can only be properly exploited when farming systems conform to the pattern which natural and economic factors dictate, and modern transport has made possible a degree of regional specialization which would often have grave risks for a self-subsisting community. Nevertheless, it would be unreal to insist on a high degree of homogeneity for the purposes of this study when present-day standards have to be so low. It must be admitted, too, that the system adopted for comparing the structure, i.e. relative percentages of the main items in the inventory, is one that is not altogether reliable. An individual farm may have a larger than usual investment in one relatively unimportant item, say, horses, which will upset the percentages of all the other items in that farm. Further, the total amount of the investment in some farms is so small that the difference between even one or two head of stock, or a few quarters of grain, will upset the pattern of farming constructed in this way. All this emphasizes the limitations of this method of study. They are limitations which can, however, be overcome by the use of large numbers of records and critical examination of each to see that it can be justifiably used to build up a group.

By examining the individual records it became clear that each group (except the Wolds) contained a number of farms where the system differed markedly from the average. In some groups, however, the majority showed the characteristics of the average, and these groups have been refined by omitting the farms which did not conform to the popular pattern. Elsewhere it became evident that the groups were not representative of any widespread type of farming. Thus the Plain of York, Holderness, and Cleveland groups showed no signs of homogeneity, but some farms throughout these areas were found to be following similar systems. It was obvious that a considerable reconstitution of several groups was required.

The regrouping which was necessary to allow for the effect of those farms in each group which followed a 'minority' system resulted in the production of ten groups under three main headings, Highland farms, Lowland farms, and Others. The average inventories for each group, and their percentage composition, appear in Table V. The greater importance of corn on the lowland groups than elsewhere is very apparent, and the relatively higher valuation of corn on the larger than on the smaller farms suggests that corn-growing was a function of size. It is also likely that the state of drainage of the land affected the system of farming. Arthur Young found Holderness a very

TABLE V
VALUATIONS PER FARM: MAIN SYSTEMS IN EACH FARMING GROUP

No. of Records	North Yorks Moors				Wolds †	460 Lowland Farms			West Riding Industrial	
	Dales 55	Craven 44	Trend 21	Craven Trend 19		Mainly Corn 134	Mainly Cattle 212	Corn and Cattle 114	With Sheep 17	Without Sheep 16
Hay	£ 4½	£ 1½	£ 1	£ ½	£ 2½	£ 3½	£ 4	£ 4	£ 2½	£ 2½
Corn	½	5½	5	4	52½	53	13	23	11½	9
Cattle	20½	33½	23	27	22	23½	33	23	21½	20½
Sheep	21	3½	23	7½	17½	3½	7	5	9	—
Horses	7	6½	3½	4½	12	8	8½	8½	5	4½
Pigs*	neg.	½	½	1	2½	1½	1	1½	1	neg.
Gear	1½	4	3	3	7	6½	4	5	4½	3½
Sundries	1	neg.	1	1½	1½	1	½	½	2	1
TOTAL:	56	55	60	49	117½	100½	71	70½	57	41
	per cent	per cent	per cent	per cent	per cent	per cent	per cent	per cent	per cent	per cent
Hay	8	2	2	1	2	4	5	5	5	5
Corn	1	10	9	8	45	53	19	33	20	22
Cattle	36	61	38	55	19	23	46	33	38	50
Sheep	38	7	38	16	15	4	10	7	16	—
Horses	12	12	6	9	10	8	12	12	9	11
Pigs*	neg.	1	1	2	2	1	1	2	1	—
Gear	3	7	5	6	6	6	6	7	8	9
Sundries	2	—	1	3	1	1	1	1	3	3
TOTAL:	100	100	100	100	100	100	100	100	100	100

* includes also a small amount for poultry and bees.

† includes 16 "Plain of York" Wolds-type farms.

unproductive district at the end of the eighteenth century owing to its wetness. Yet in the Middle Ages numerous Acts of Parliament were passed for draining Holderness or for embanking it against the sea. These ceased abruptly in Henry VI's reign, and were not resumed until 1709. It is unlikely that no farmers or lords maintained the drainage on their holdings or estates, but evidently a large number paid little attention to it. This difference in management must have influenced the productive capacity of the land enormously, and may well have been the prime cause of the difference in the farming systems in Holderness in the seventeenth century.

But probably the outstanding feature of the farming is the importance of cattle in all groups. On five of them the valuation of cattle exceeded the

valuation of any other individual item, and on three others it was practically equal to the highest item. Only on the Wolds and the Mainly Corn Lowland group did cattle definitely take second place. Their importance in seventeenth-century farming is very well illustrated by the inventories, and it is probably not too much to say that cattle formed the backbone of the farming of the times.

The information on regional farming in Table V gives the average valuations of farming groups, each of which consisted of farms following the same system. Generally, however, the number of holdings smaller than the average was greater than those which exceeded the average. The modal farm in each group would, therefore, be one smaller in size than the average appearing in Table VI. Frequency distributions have been plotted in order to show what,

TABLE VI
NUMBERS OF LIVESTOCK AND DEADSTOCK AND QUANTITIES OF PRODUCE
on "model" farm in each of Ten Farming Groups

	Dales Craven		North Yorks Moors		Wolds	Lowland			West Riding	
	Dales Craven		Dales Craven			Corn	Cattle	Corn and Cattle	With Sheep	Without Sheep
	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.
<i>Cattle</i>										
Cows	4	5	4	5	4	3	5	4	3	4
Oxen	—	2	2	2	2	2	2	2	2	1
Others	8	9	8	10	5	5	8	7	4	5
TOTAL:	12	16	14	17	11	10	15	13	9	10
Sheep	90	30	70	40	*	20	20	20	40	—
<i>Horses</i>										
Working	1	1	1	1	3	2	2	2	1	1
Young	—	—	—	—	—	—	—	—	—	—
Pigs	1	1	1	1	Sow	1	1	1	1	1
Hens	—	—	12	12	9	6	6	6	—	—
Wains	—	—	1	1	1	1	1	1	—	—
Coups	—	2	—	1	—	—	—	—	1	1
Ploughs	—	1	1	1	2	2	1	2	1	1
Harrows	—	1	1	1	2	2	1	2	1	1
Hay Stack	2	—	—	—	—	—	2	1	1	1
Wheat qrs	—	—	—	—	30	8	—	10	—	—
Barley qrs	—	—	—	—		5	5	5	—	—
Oats qrs	—	5	5	5		5	—	5	12	8
TOTAL	£	£	£	£	£	£	£	£	£	£
VALUATION:	44	42	45	45	61 or £89	57	47	55	41	30

* Wolds farms were equally likely to have about 30 or 150 sheep.

in fact, was the most usual occurrence, and from them a 'model' has been constructed for each group to show the sort of farm which would be most representative. This information is presented for all groups in Table VI.

The total number of cattle varied from nine per farm on the West Riding farms with sheep to 17 in Craven, and was usually made up of a pair of oxen and nearly twice as many young cattle as cows.

Numbers of sheep varied more widely than cattle but only three groups were likely to have more than 40 sheep on the representative farm.

The number of horses was influenced by the size of farm and the importance of corn, but it was unusual to find more than two working horses except on the Wolds.

Most farms were likely to have a pig, but few had more than one, and a dozen hens was usually the maximum number of poultry.

Equipment was usually very simple, and seldom exceeded a wain or coup, a plough, and one or two pairs of harrows, with a variety of hand tools and dairy utensils.

The amount of crops on hand varied, of course, during the year, and the quantities which appear in Table VI are no more than an attempt to indicate the relative amounts of the different groups.

As already indicated, the total valuation of the model farm was less than the average on each group. It just exceeded £60 on the Wolds—on the Wold farms with larger sheep flocks it could easily be half as much again—but on most groups it was less than £50.

This investigation shows quite clearly that farming in seventeenth-century Yorkshire varied according to district. It is equally evident, however, that other important factors influenced it. In such districts as the Plain of York and Holderness the type of farming even in those days varied widely, and it seems probable that drainage, or the lack of it, was the main cause of the difference. But it is easy to exaggerate the variations in farming, for present-day experience shows no more homogeneity in districts which had been picked for this factor.

The highland districts of Yorkshire relied more on cattle and sheep, while the lowland districts grew more corn. The importance of cattle, however, was considerable on all farms, and cattle can be regarded as the backbone of seventeenth-century Yorkshire farming, almost irrespective of district.

By building 'models' the structure of the 'representative' farm of each group has been studied, and the amount of variation between the districts judged, by comparing the numbers of stock and the amounts of corn and hay on representative farms group by group. On the ten types of farming groups the total valuation varied considerably—from £30 on the West Riding In-

dustrial farms without sheep to £61 on the Wolds (or £89 if the larger sheep-flocks are taken as typical of the Wolds), although no less than six groups had models of just over £40 total valuation—which provides little scope for showing wide variations in type of farming. Nevertheless the variations which appear in the models, as well as those in the larger groups of Table I, provide an individuality to each group which reflects very clearly the influence of region on the system of farming in the seventeenth century.

NOTES AND COMMENTS (*continued from page 102*)

situation of the Society was satisfactory and the balance brought forward had risen from £229 to £347.

At a meeting of the Executive Committee held later in the day, Mr W. Harwood Long was elected Chairman.

FUTURE CONFERENCES

The One-Day Joint Conference with the Association of Agriculture will be held in the Institute of Education, University of London, on Saturday, 3 December, when papers will be read by Mr Michael Havinden on Agricultural Progress in Open-Field Oxfordshire and Mr John Saville on Public Opinion and Agricultural Depression, 1880–1900. It is hoped that the chair will be taken by the President.

The Annual General Meeting and Conference for 1961 will be held at Seale Hayne Agricultural College, Newton Abbot, Devon, from 5 to 7 April. Among those giving papers will be Professor B. H. Slicher van Bath of the Department of Rural History at the Agricultural University of Wageningen and Mr J. Z. Titow. Mr S. T. Morris of the Department of Agricultural Economics, 1 Courtenay Park, Newton Abbot, will act as local secretary.

EXHIBITIONS ON AGRICULTURAL HISTORY

There have been three recent museum exhibitions of interest to agricultural historians. The first was opened at the Castle Museum, Norwich, on 25 June by the Minister of Agriculture and is entitled 'Four Thousand Years of

Norfolk Farming'. In choosing this challenging title the staff of Norwich City Museums have set themselves a stimulating and difficult task, which they have carried through with very creditable success. In addition to the exhibition itself, the Museum has published an eighty-page illustrated catalogue which not only describes exhibits, but at the same time provides a short history of Norfolk farming. The exhibition closes on 2 October.

In connection with the meeting at Reading University this summer of the International Grassland Congress, the Museum of English Rural Life arranged a documentary exhibition of Grassland Husbandry in the last Two Hundred Years. It opened on 5 July and will close on 30 October. There is no published catalogue, but as an introduction to the exhibition the Museum has published an essay called 'Grassland Husbandry in the last Two Hundred Years' by Professor H. Cecil Pawson.

Under the auspices of the National Museum of Antiquities of Scotland, an exhibition of agricultural implements and techniques has been opened at the Museum Gallery, 18 Shandwick Place, Edinburgh. It comprises a number of sections dealing with various aspects of agriculture, some obsolete, some from current practice. The main feature is the section devoted to the history of the plough in Scotland. The organizers intend to hold a similar exhibition every summer, and they appeal for fresh materials from farmers, crofters, and

rural handicraftsmen, so that the present sections may be changed or enlarged from time to time.

ECONOMIC HISTORY SOCIETY
CONFERENCE

The Annual Conference of the Economic History Society will be held at the University of the South-West, Exeter, from April 7th to

April 9th, 1961. The theme will be Transport and Inland Trade. It has been arranged that the British Agricultural History Society Conference shall conclude at lunchtime on April 7th in order that members wishing to attend both conferences may have time to travel from Newton Abbot to Exeter for the beginning of the Economic History Society Conference.

NOTES ON CONTRIBUTORS

A. S. Thomas, B.Sc.(Hort.), M.Sc., D.Sc., formerly in the Colonial agricultural service, is now recording changes in vegetation for the Nature Conservancy. He has published many papers on ecological subjects in the *Journal of Ecology* and elsewhere.

G. R. J. Jones, M.A., lecturer in geography in the University of Leeds, is engaged on a full-scale study of the relationship between settlement patterns and land tenure in Wales.

Gordon Donaldson, M.A., D.Litt. (Edinburgh), Ph.D. (London), was an Assistant Keeper of the Scottish Records from 1938 to

1947, and is now Reader in Scottish History in the University of Edinburgh. In addition to several volumes edited for the Scottish Historical Society, he has published books on *The Scottish Reformation* and *Shetland Life under Earl Patrick*.

Miss H. M. Clark is a research scholar in the department of English local history, University of Leicester.

W. Harwood Long, M.A., is Provincial Agricultural Economist in the University of Leeds department of agriculture.

Book Reviews

PETER MATHIAS, *The Brewing Industry in England, 1700-1830*. Cambridge University Press, 1959. xxviii+596 pp. 85s.

The Industrial Revolution has been presented for the most part in terms of changes in the mining, metallurgical, and textile industries. Now we have for the first time a detailed and scholarly account of the 'revolution' in an industry of the food and drink group, and one which was wholly dependent for its raw materials, barley and hops, on native agriculture. By the end of the seventeenth century the terms 'ale' (originally a sweetish, unhopped malt liquor) and the newer 'beer' (a bitter, hopped malt liquor) had come to describe more or less identical products following the victory of the latter drink. Beer brewing was already to a great extent a factory industry in London and the larger towns. There was even a certain amount of automation, based on horse-driven pumps and gravity feed, and there existed a mass retail market for beer similar to that served by the flour miller and baker. But expansion in the larger breweries was limited by the cost of transport and the risk of deterioration in the finished product. Then in or about 1722 came the invention of porter and the subsequent growth of porter brewing, particularly in London; in fact Mr Mathias's book deals mainly with the period during which the cheaper and hardier porter reigned supreme. "The appearance of the new beer should be seen . . . as an event of the first importance, or as an invention exactly equivalent in its own industry to coke-smelted iron, mule-spun muslin in textiles, or 'pressed-ware' in pottery." After the application of the rotative steam engine to the trade from 1784 onwards it became possible to speak of 'power-loom brewers', and in 1796 Samuel Whitbread brewed "for the first time in any brewery in the world, over 200,000 barrels of porter in a single season." The basis of this industry was 'John Barleycorn'. As Mr Mathias remarks, wheat, "the queen of

cereals, has exercised a far wider dominion over the textbooks of farming history than she has ever enjoyed in the fields." In the early eighteenth century the national output of barley, which, unlike wheat, could be grown profitably in every county in England and Wales, was almost certainly greater in bulk than that of wheat. (An unfortunate error in line 18 on page 390, where 'bushels' should read 'quarters', makes nonsense of Charles Smith's estimate of 1766 for English oat, rye, and wheat production.) Mr Mathias's chapters on national and regional barley farming, malting, and the hop industry and its markets are in themselves a first-class contribution to the history of English agriculture. This scholarly book is, however, packed throughout with well-digested information, drawn very largely from hitherto unquarried business archives, and it is difficult to see how it can ever be superseded.

W. H. CHALONER

B. H. SLICHER VAN BATH, *De agrarische geschiedenis van West Europa (500-1850)*. 416 pp. Aula-Boeken, Het Spectrum N.V. Utrecht: Antwerp, 1960. f. 3.50 (about 7s.). Paper back.

Ever since I read André J. Bourde, *The Influence of England on the French Agronomes, 1750-1789*, I have been convinced that one of the most neglected factors in the history of the development of farming is the relation with each other between the various systems practised in the different countries of western Europe, and at a later date those of the world. My studies for the last two volumes of the *History of Technology* underlined, at least in my own mind, this conviction. The most familiar nexus amongst all of these is that between Flanders and this country which I have discussed in a minor way in an essay 'Low Countries Influence on English Farming' (*English Historical Review*, Oct., 1959). There are many others: the persistence of the classical tradition along the Mediterranean littoral,

the influence of the Arabs in Spain and Sicily, the development of a four-course rotation in Piedmont and the Moselle highlands, the relation between Denmark, Schleswig, Friesland, and north-west Germany, both in cattle-breeding and crop rotation.

Such studies as those of Dr Bourde and my own only sketch the fringes of the subject. Now comes to hand Professor Slicher van Bath's elaborate and careful study. It is a major work in a minor dress, covering more than a thousand years in time, and an equally wide area in space. By the year 500 A.D. the economy of the *Pax Romana* had collapsed; by 1850 the modern period of mechanical industrial production was well established, and new transport facilities had made the importation of overseas foodstuffs possible. Times had changed. This is not to say, of course, that industry had not been developed, and that the exchange of manufactured goods for foodstuffs did not exist before that date; but the recovery of a money economy had been slow in appearing. It took nearly a thousand years.

Professor van Bath has described in detail the so-called natural economy of western Europe between the collapse of the Roman Empire and the Middle Ages. He describes the slow emergence of feudality, and he brings to our notice many documents of the early middle ages that are not, I suspect, too well known to agricultural historians in this country. He has compiled convincing figures showing area yield and kinds of grain cultivated in different districts, and he has discussed the feeding habits of people dependent for their nutrition on their systems of agriculture and the crops cultivated.

The recovery and increase of population between the ninth and the thirteenth century is familiar ground, as is the general effect of the Black Death. From this time onwards there have been innumerable local-period studies, and the general outline of the progress of western Europe is perhaps better known. It would be supererogatory to re-sketch it here. It is enough to say that a comprehensive description of what happened from the limits of east Germany to the Atlantic, with some

glances at Scandinavia and occasional references to Spain and Italy, is provided. The progress in land reclamation, the change in the relation of landlord and tenant, the effects of economic, demographic, and industrial development are not neglected, and instructive statistical tables, when the material allows, are provided. The development of new techniques in farming is discussed. A glance at the bibliography shows a remarkable acquaintance with the vast literature of the subject. This is a book that has long been wanted, is most admirably designed, and should be translated into English without delay.

G. E. FUSSELL

J. A. SYMON, *Scottish Farming Past and Present*. Oliver and Boyd, 1959. 476 pp. 42s.

As Mr Symon puts it at the beginning of Chapter XVIII: "From the agricultural standpoint Scotland is not one but several countries, each with varying conditions of soil and climate determining its system of farming." This is what gives rise to the difficulty of writing, in one volume, a comprehensive and satisfactory account of Scottish agriculture from earliest times till the present day, even when in this case the writer is one who has upwards of fifty years of experience behind him as a practical farmer, a lecturer on agriculture, and a representative of the Government concerned with agricultural education and research. This difficulty becomes evident from those chapters of the book which deal with the eighteenth century onwards.

The first hundred pages bring the story through the feudal and monastic periods up to the beginning of the eighteenth-century improvements. Much valuable material is set before us, for example on early leases (pp. 67 ff.) and teinds (81 ff.). By combing through the *Acts of the Parliament of Scotland* and such works as the *Rental Book of the Cistercian Abbey of Coupar-Angus*, Mr Symon has amassed a deal of useful statistical information about exports of cattle, sheep, hides, and wool, exports and imports of grain, the value of fishery products, the numbers of animals and hens, and the quantities of produce rendered as rent

in kind (from which an idea of the agricultural output for some parts of the country may be gained).

The first two chapters are illustrated by seven Figures, the sources of only two being given. The sickle plough on p. 7 looks like a poor copy of the one shown in Maclean's *History of Mull*, 1925, II, p. 112, or in J. Macdonald's *General View of the Agriculture of the Hebrides*, 1811, p. 156, and the caschrom is too awkwardly shaped to be workable (*caschrom* is invariably spelt wrongly throughout the book with a grave accent above the *a*). The "cuppled house" on p. 27 should also be better represented. The illustrations are not as closely linked with the text as one would like, and this also applies to most of the photographs, in themselves excellent, which ornament the latter part of the book.

For the eighteenth century, a certain diffuseness of treatment is evident. Thus, to get anything like a complete story one must read Chapters VII, IX, XVII, and XIX, and, for the Highlands and Northern Islands, Chapters VIII and XVII. The emphasis is on the individual achievements of "leading personalities." It is not easy to get the pattern of eighteenth-century agriculture clear for the various parts of the country, and Mr Symon is too apt to generalize for all of Scotland what is in fact characteristic of only a small area, as can be seen from the concluding paragraph of almost every chapter in the book. Considering the enormous wealth of material at the disposal of the eighteenth-century agricultural historian, his somewhat scanty treatment of the period is surprising. For this period, and throughout the chapters which take the story of Scottish agriculture through the periods of depression and prosperity caused by the wars of the nineteenth and twentieth centuries, Mr Symon tends to paint pictures of unrelieved gloom or of all-embracing rosiness. The mixture of grain crops and beef-production gives Scottish agriculture considerable elasticity, even when times are very bleak.

The two chapters on the Highlands and Northern Islands are in many respects inadequate, and in some points inaccurate.

Machairs, incorrectly described on p. 119 as "peat-covered lands," are properly tracts of bent-covered sandy soil. In a book of this size and scope one would expect a better source than John Gunn's *Orkney Book* (1909) for information on the complicated story of udal land tenure in Orkney. The great part played by the beef industry in the Western and Northern Islands, and its considerable influence on agriculture, is not mentioned. It is also worth remembering that the clearances, which turned much cultivable land into sheep-runs, gave a considerable boost to the herring industry from the re-settlement of displaced persons at the coast. As always, however, we are given a lot of handy statistical information; but a full treatment of agriculture in those areas really demands a separate volume by a specialist.

Chapter XVIII, on land settlement, deals withcroftingagriculture amongst other things. Since 50,000 of the 75,000 agricultural holdings in Scotland are under 50 acres arable (p. 424), one would like to see a somewhat fuller treatment of the subject. Crofting, even more than farming, is a way of life rather than an industry, and since the geography of Scotland will probably always make crofting agriculture an essential part of its economy, the ideal type of land settlement would seem to be that in which, by a series of holdings of graded sizes, a young man of enterprise and ability could climb the ladder of agricultural success without any great initial outlay of money. It is well to be reminded that a Lowland croft, which is run like a miniature farm, is very different from a Highland croft, though both to some extent come under the definition of a croft, on p. 287, as "any self-contained and separately occupied small unit of from one to ten or more acres, exclusive of outrun."

This meaning of the word *croft* came into use towards the end of the eighteenth century and became firmly established after the *Crofters Commission Report* of 1884. In the days before enclosures, the word was applied to the infield, or cultivable land around the buildings, or a portion of this, but not to the whole agricultural unit. When this has been realized, the problems raised about medieval "croftis"

on p. 287 and elsewhere become non-existent.

The chapters dealing with twentieth-century agriculture, bringing the story up to the present day, and those dealing with specific topics—livestock, poultry and bees, grasslands, the potato, etc.—are the best parts of the book, and will have the widest appeal to the farming public. The great and ever-increasing part which the government has played in all branches of agriculture, chiefly from the time of the 1914–18 war, is here documented by one who has inside knowledge of the department most intimately concerned with agriculture. His keen interest in experiment and research on subjects which, like bees and horticulture, are not exclusively agricultural, and in the diffusion of knowledge through instructors, advisers, group discussions, etc., results in a readable and informative section. The story of the Highland and Agricultural Society, of the various Research Institutes and Associations, of the ramifications of their work, and of the increasing influence these bodies are exerting on all branches of food production (and thereby on the social well-being of the nation) makes very interesting reading.

The appendices are of considerable value. The first, giving a chronological list of books relating to Scottish agriculture down to 1850, should, when used in conjunction with the similarly large bibliographical appendix in J. E. Handley's *Scottish Farming in the Eighteenth Century*, make it unnecessary for future writers on Scottish agriculture to use up space on book lists. The other appendices give a list of the Acts of Parliament relating to agriculture from David I to George VI; the fiars prices of oats from 1647–1956, thus supplying a need which Malcolm Gray felt in *The Highland Economy* (1951); and a group of tables containing agricultural statistics relating to crops, labour, production, distribution of different types of farms, and so on. In a book so generously endowed with appendices, one might also wish for a glossary, since a number of Scots words, such as *muirburn*, *winning*, *shielings*, *haining*, *mashlum*, etc., are not al-

ways glossed in the text, and will not all be found in English dictionaries.

The book as a whole is well produced and pleasant to look at. It is to be hoped that the fair number of misprints and minor errors will be corrected in a later edition.

ALEXANDER FENTON

THOMAS C. SMITH, *The Agrarian Origins of Modern Japan*. Stanford University Press, 1959. xii + 250 pp. 40s.

The author, an associate professor of history at Stanford University, considers that the rapid modernization of Japan after the Meiji Restoration of 1868 was prepared and determined largely by agrarian development in the Tokugawa period. In the first part of this book he studies the traditional seventeenth-century village with respect to its land system, social organization, farming practices, and the structure of political power. Then in the second part he traces the process of transformation of the village from the eighteenth century onwards, through the growth of markets, rising agricultural productivity based on technical advances, changing farming system and class structure, and political conflict in the village; and he stresses the importance for Japanese history of agrarian changes, the central feature of which was a shift from co-operative to individual farming, "perhaps justifying comparison with the agricultural revolution in Europe." Finally he makes clear the significance of these agrarian changes for later economic and political development. Besides making full use of the researches prosecuted since the war by Japanese scholars, usually unfamiliar to foreign students by reason of linguistic difficulties, he also utilizes original materials himself. His work is a most attractive survey of the subject, and at the same time a clear and reliable summary.

The most interesting point of his study for English agrarian historians is that he always tries to compare the agrarian changes of the Tokugawa period with contemporary agrarian development in western European countries; but finding that they took entirely different courses, "despite the fact that the

starting points in the two cases were similar in important respects," he notices the inadequacy of the comparison. It seems to me, however, that an interesting and profitable comparison might have been possible had he tried to choose the counterpart of agrarian changes in Japan at the corresponding stage of economic development in European countries, instead of comparing directly two different developments merely because they happened during the same period.

K. UGAWA

K. CAMERON, *The Place-Names of Derbyshire*. English Place-Name Society, Vols. XXVII-XXIX, 1959. lxxiv + 830 pp. £5 5s. (i.e. 35s. each).

Comparatively little work has yet been done on the farming history of Derbyshire. These three substantial volumes on the place-names of the county, therefore, are specially welcome. Mr Cameron contributes an interesting and informative introduction using the collective evidence of place-names to suggest the chronology of early settlement, leaving the reader the no less absorbing task of looking at each parish individually and speculating upon its later history of colonization and expansion. This labour is immensely rewarding, for most of the eastern half of the county as well as much of the north-west was originally densely wooded, and much clearance did not take place until the later Middle Ages. As Mr Cameron shows, the Anglo-Saxons skirted the forests by entering the county from the Trent valley and moving north and north-west along the Dove and Derwent valleys. A map showing the place-names suggestive of former woodland illustrates this argument better than words (though the purpose of the map could have been made more readily intelligible to the casual reader if it had been given a title. The same criticism can be made of all the maps, which, be it noted, are in the pocket at the end of Vol. III, not at the end of Vol. I as is stated in the table of contents and on the dust-jacket).

Many parishes in eastern Derbyshire, therefore, admirably illustrate assarting and

the growth of new settlements. Staveley, for example, itself meaning 'clearing from wood where staves were got', begot Staveley Woodthorpe by the twelfth century, Netherthorpe in the thirteenth, and The Hague by the fourteenth century. Alfreton parish acquired a new hamlet called Riddings in the mid-thirteenth century, and in the early fourteenth century Swanwick (a dairy farm) and Somercotes (summer shelters), both suggesting that they originated as the headquarters of summer dairy pastures and later developed into permanent settlements. In the Peak district of north-west Derbyshire, the *booths* of Edale parish likewise imply temporary summer pastures in the royal forest (the earliest documented reference dating from the mid-fourteenth century, at least a century after the first references to the booths of Rossendale and of Macclesfield Forest in Cheshire), which had been transformed by the mid-Tudor period, and probably much earlier, into permanent cattle stations, officially called *vaccaries*. As pressure on the land increased, colonists were found to populate even the most barren hills of the Peak. The parish of Hope Woodlands, lying in a region which is nowadays classed as land of little agricultural value, had attracted settlers to Ashop and Lockerbrook farms by the beginning of the thirteenth, and to Ronsley and Rowley farms by the mid-fifteenth century.

For a county which probably occupied almost as many of its inhabitants in its mines as in its fields by the beginning of the seventeenth century, there are surprisingly few place-names to suggest the importance of minerals, though some of the names of the groves, that deceptively alluring term for a leadmine, have survived. As for the absence of pre-English names in the leadmining area, Mr Cameron seeks to solve this problem by suggesting that the mines were worked only in the summer months and were temporary sites only. But the temporary use of land for summer pastures did not prevent other places from acquiring names that persisted into the era when they became permanent settlements. Place-name study, of course, is a

treacherous bog, and the most difficult propositions to defend are those which argue from silence. Mr Cameron is more aware of the dangers than we who look on, admire, and criticize. He treads most warily of all when considering the possibility of the survival of British villages into the Anglo-Saxon period. On this controversial issue, he seems to veer rather towards the side of those who think that few Celtic settlements survived except in the north-west. Many of his arguments, however, provoke retort. For example, even though it be accepted that "few of the names [containing the element 'walh'] bear the mark of any great antiquity," this does not prove that they were not old settlements. One would not expect such names to be of any greater antiquity than the Anglo-Saxon settlements around them. And if, as Mr Cameron believes, Walton still means a 'farm of the serfs', where, it may be asked, did the serfs come from? The stimulating debate on the survival of British villages can now continue with fresh arguments based upon Derbyshire. Mr Cameron can feel satisfied that his three volumes will start more discussion on this and other topics, for he has equipped his readers with much new knowledge enabling them to take another and more intelligent look at the Derbyshire countryside.

JOAN THIRSK

CONYERS READ (ed.), *Bibliography of British History: Tudor Period, 1485-1603*. Issued under the direction of the American Historical Association and the Royal Historical Society of Great Britain. Oxford University Press, 2nd edn, 1959. xxviii+624 pp. 63s.

The second edition of this familiar and invaluable work covers the new material on Tudor England published during the last 25 years. It is identical in form with the first, except for a rearrangement of the section covering Wales. "An exhaustive survey of the material in print has been made to 1 January 1957. Many entries have been made of books and articles appearing since that date, but no complete survey of this more recent literature

has been attempted." Altogether the volume contains over 6,500 items: some five thousand new titles were collected, of which about one-half were finally included. A comparison of the various sections thus provides an interesting if salutary conspectus of historical studies during the last generation. That on 'Political History' has expanded by nearly 60 per cent, on 'Cultural and Social History' by more than 100 per cent, but on 'Economic History' by only 30 per cent. Of the last 'Agrarian History' (under the title of 'Rural Conditions') comprises, with 102 entries, less than one-quarter, but 'Industrial and Commercial History' more than three-quarters. The problem in 'Economic History', we are told, has been rather one of "getting everything in than of leaving anything out." The present reviewer has not noted any serious omissions, though occasionally the editorial comments seem insufficient. Some further note than "The standard book on the subject" now seems called for against H. L. Gray's *English Field Systems*.

In the field of Local History the volume is open to more serious criticism. Everyone will sympathize with the editor's statement that "There is a real need for a critical bibliography of English local history, a field in which there are so many tares among the wheat. . ." It is therefore all the more pity that the present highly select entries have not been more carefully checked and sifted. It is one of the few sections not stated to have been submitted to the scrutiny of specialists, or of scholars in this country, and it is the one which most evidently requires it. The list of 'Other Works' now added under each county, generally consisting of half a dozen articles in local archaeological collections, which also appear generically under 'Local Societies', is too selective to be of much assistance. The choice of entries under "Town Histories and Records" seems particularly haphazard, quite apart from the fact that many works so listed, like J. S. Brewer's *Hatfield House*, are not 'town histories'. To cite one county only: out of the seven items mentioned in this section under Kent, it is strange to include no less

than three works on Dover, Bridgman's *Sketch of Knole* (which is little more than a Regency guide-book), a history of Chislehurst, and nothing on either the episcopal city of Rochester or the county town of Maidstone. There are useful if old-fashioned works by J. M. Russell on Maidstone (1881) and F. F. Smith on Rochester (1928). If anything were to be included on Knole it should have been C. J. Phillips's *History of the Sackville Family* (2 vols. [1930]). The cross-references to items in Gross's *Bibliography of British Municipal History and Sources and Literature of English History . . . to about 1485* contain several unnecessary repetitions of items cited in full in the text, and no. 671 is an error for 677.

A casual examination, indeed, shows that the volume as a whole should have received more careful checking. Dr Finberg appears as an author on p. 364, but his name is not indexed; an index reference under Dr Hoskins's name (4335a) does not appear in the text; G. R. Batho's initials are wrongly given on p. 345; 'Deene' is mis-spelt in the index (p. 554); Dr Willan's name is mis-spelt on p. xii; Ireland's *History of Kent* remains garbled, as in the first edition, under the name 'Weland'; and Bridges's *Northamptonshire* was not compiled from "the manuscript collections of Sir Peter Whalley," but (as the title page indicates) from the manuscript collections of John Bridges by the Rev. Peter Whalley.

A. M. EVERITT

DAVID THOMSON (ed.), *The New Cambridge Modern History*, Volume XII, *The Era of Violence: 1898-1945*. Cambridge University Press, 1960. 602 pp. 37s. 6d.

Whoever may profit by reading this book, it will not be a student of agricultural history. A brief early chapter entitled "The Economic Map of the World" suggests some reasons for the general dissatisfaction with which this volume has been received. If Professor Allen had been able to concentrate on an Economic Map of Europe he might have succeeded. As it is, we can be told, of the agrarian story, only that

the first world war led to a shortage of food-stuffs in Europe, thence to over-production in Canada, Argentina, etc., to surpluses, "serious disequilibria," policies of protection, and industrial consumers paying higher prices for food. These are economic trends, not history. More interesting pieces of agricultural history may be found in the editor's own chapter on "The Transformation of Social Life." But if we are to read about agriculture in a passage on the failure of democratic political institutions in a chapter on social life, we clearly need a better index than is provided here. This volume contains a brilliant chapter on the Peace Settlement of Versailles. For the rest, one deplores that the editorial plan was not more definite and more capable of realization.

NORMAN SCARFE

VAL CHEKE, *The Story of Cheese-Making in Britain*. Routledge and Kegan Paul, 1959. xii + 348 pp. 40s.

This is a delightful story of cheese-making and although historians may claim that it is not a history in the true sense, it is a book that will remain for long an important source of information. It is attractively written. The chapters on early history, more especially those dealing with cheese from Saxon to Tudor times and cheese-making in the seventeenth and eighteenth centuries, are of special interest to the local historian. In spite of the modern progress in cheese-making which the author refers to in great detail, it is unfortunate that economics and costs of production prevent us from having that rich flavour of a slowly matured and mellow blue-veined cheese. No longer do we see Blue Wensleydale in any quantity, Blue Vinney (the lovely Dorset blue) is no more, and the epicurean's dream, a Blue Cheshire, appears to have vanished entirely. It would almost appear that there is a small fortune to be made by an enterprising cheese-maker who will provide us with these delights of bygone days. A great deal of patient research has gone into the writing of this book, not only about cheese-making, but also about the lives and living conditions of those who made the British

cheeses in farm dairies throughout Great Britain.

The appendix is too scientific for the layman, and may not be detailed enough for the dairy technician; and its connection with the story of cheese-making is rather remote. Apart from this, it is a book that is a useful addition to the literature of agriculture.

ALEXANDER HAY

PHILIP A. WRIGHT, *Traction Engines*. A. & C. Black, 1959. xiv+90 pp., illus. 21s.

Little serious attention has yet been paid to the history of the steam traction engine, except by Mr Ronald Clark in his excellent studies of the firms that built them in the eastern counties. Mr Wright's book is therefore welcome as a brief general survey of the subject. Though it is primarily concerned, as its title implies, with the machines themselves, it discusses also the uses to which they were put. It has therefore something to offer to the historian who is interested in the mechanization of agriculture during the past century. The plates are useful, with a gorgeous frontispiece in full colour; and the book is admirably produced.

JACK SIMMONS

AGRICULTURAL ECONOMICS RESEARCH INSTITUTE. *The Agricultural Register*, New Series. *Changes in the Economic Pattern, 1957-9*. Oxford University Press, 1960. xii+148 pp. 25s.

This useful compilation is the second of the post-war series and follows much the same pattern as its predecessor. It has chapters on agricultural policy including the small farm scheme launched in 1959; on marketing and prices of the main products, including fruit and vegetables; and a general account of the place of agriculture in the British economy, as well as summaries of current information on rents, wages, employment, and other inputs.

Mr Frankel, the main author, has included much detail which is only of indirect concern to British agriculture, such as the international agreements on wheat and sugar, and the

negotiations between the Sugar Board and the refiners over the implementation of the agreed price for Commonwealth sugar. Future issues could be even more valuable if the text were rigorously pruned of these less important matters and all the sources quoted instead.

EDITH H. WHETHAM

MARY D. LOBEL (ed.), *A History of the County of Oxford*. Vol. vi, Ploughley Hundred. Oxford University Press, 1959. xxviii+390 pp. £6 6s.

Ploughley Hundred lies east of the Cherwell, on the borders of Northamptonshire and Buckinghamshire, and most of its thirty-odd parishes are on the belt of cornbrash between the oolite plateau and the Oxfordshire clay. Its uplands are rather bleak, and cornbrash soil is not the county's best. Although Bicester, its market town, is an ancient road junction, the Hundred is remote, and came into public notice only in times of crisis, which is why the district was pounced with skirmishes in the Civil War, and why Bayard's Green in Stoke Lyne parish was a tournament ground, and a great place for baronial intrigue, in the days before tournaments were made spectacular and respectable. Neither the Oxford canal, completed in 1790, nor the railways made much impression outside the Cherwell valley; apart from some quarrying and fishing the Hundred's staple was agriculture, and until the twentieth century its society stayed sharply divided between the parks and houses of its improving landlords and celebrated fox-hunters, and the village life so ably and movingly described in Flora Thompson's *Lark Rise and Over to Candleford*. Now, with the United States Air Force at Heyford, and a variety of other camps and bases spilling into Bullington Hundred, things are not what they used to be.

The Hundred's agrarian history follows an appropriately traditional pattern. There is evidence of pagan Saxon settlement at Oddington and elsewhere, and then of a gradual extension of the cultivated land that continued into the thirteenth century. There were often

two open fields made three before the sixteenth century; at Fritwell there were eventually seven, and at Islip six, but at Fringford strips and closes lay in one apparently undifferentiated maze until 1762. The Black Death did severe damage; Tusmore seems to have been depopulated by 1358, when it was emparked, and even conservative landlords like the abbot of Westminster, lord of Islip, had to grant leases and copyholds to their restless tenants. Charlton, where the plague caused fewer deaths, steadily lost its villeins by flight in the fifteenth century, and their lands were eventually absorbed by freeholders. Yet almost all the surviving medieval churches contain fifteenth-century work; the land was not a desert. There was some consolidation and private enclosure in the sixteenth century—enough to provoke an abortive rising at Hampton Gay in 1596—and sheep farms multiplied, but most of the ground remained arable until the great age of parliamentary enclosure, the latest act being that for Charlton, in 1858.

Despite the longer courses of rotation that multiple fields allowed, the arable showed signs of strain in the seventeenth century, when sainfoin was widely introduced to relieve the soil. The improving landlords, squires and rectors, who seized their chance after enclosure, often turned to dairy-farming and stock-rearing, with root crops and a Norfolk course on the dwindling arable. This was the normal pattern round Bicester, where the market flourished until the early eighteenth century, when the butter in which local estates began to specialize went to London by wagon; the town's cattle markets continued to prosper, but its general market declined in the face of plenty. So did the fortunes of the poor; the Bicester Emigration Committee even sent 111 of them to Liverpool in carts, *en route* for the United States on the rate-payers' money, but many of them worked their way back to destitution in Oxfordshire rather than perish in Eden.

This volume of the Victoria History follows the satisfactory pattern of its predecessor (reviewed *supra*, VI, pp. 117–18). Each parish

has an essay on economic and social history which sketches what is known of its farming; there are good field maps, and some pleasant illustrations. The introductory chapter on the Hundred is a little more general this time, although it is still overloaded with administrative history; there is some geology, which is an improvement, but the railways and the Oxford canal would be better noticed there than under the parishes, and so would the pattern of settlement. Certainly the book cannot be wished more expensive, even though its price represents a mere three shillings a parish, and if it were to be longer, then the extra space might best be given to longer quotations from Flora Thompson. If, after all, the reader wants to know what it felt like to live in Ploughley Hundred in the 1880's, *Lark Rise* is still his book.

GEOFFREY MARTIN

H. CECIL PAWSON, *Cockle Park Farm. An Account of the Work of the Cockle Park Experimental Station from 1896 to 1956*.

Oxford University Press for the University of Durham, 1960. xiv+262 pp. 35s. net. Cockle Park Farm of 461 acres became the Northumberland County Agricultural Experiment Station in 1896, and in 1917 60 acres adjoining, known as Paradise Farm, were added. Both were in poor condition when they were taken over, and, even in 1917, the rent paid to the landlord, the duke of Portland, was only 11s. 10d. an acre. In 1938, in order to facilitate arrangements for building improvements, the whole was bought on a 999 years' lease for £8,000. With the reorganization of the agricultural advisory service after the war, the Station was handed over in 1947 to King's College, Newcastle, by whom it has been administered ever since.

The subject of this review covers the whole sixty years of the Station's existence, practically up to the present time. It is written by Professor H. C. Pawson who has been associated with it personally for the last forty years, and in whose affections it obviously occupies the position of a favourite child. According to him, the book "presumes to be

history," and it is on this presumption that it can stake its claim for notice by agricultural historians. In fact, however, 188 of its total of 262 pages are a description of the Station's experiments during this period, and it is hard to believe that their contribution to agricultural knowledge is primarily historical. At the same time, they provide a first-class record of the experiments on which the Station has built its reputation, and they remind the reader that these deal not only with basic slag and wild white clover but with other subjects extending over the whole range of arable crops, of cattle and sheep, and even of horticulture and forestry. By 1954 there were no fewer than 1,500 plots running simultaneously.

No agricultural historian can read this book without profit. The contrast between the emphasis on basic slag for enriching the nitrogen content of the soil through clovers sixty years ago and the present-day reliance on synthetic nitrogen is an outstanding example of change. The idea that silage can provide an additional source of protein instead of merely replacing roots has a more recent origin. But the fact that experimental plots of wheat were yielding up to 60 bushels per acre in 1905 and over 30 cwt in the 'thirties indicates that today's yields have been attainable for many years under suitable conditions. In some other ways we have made remarkably little progress. Very early in his tenure of office Gilchrist found that there were big variations in the amounts of dry matter in swedes, due largely to variety, season, and soil. At Cockle Park 8 tons of swedes grown in 1904 had as much feeding value as 11½ tons grown in 1901. Yet the only tables of feeding-stuffs composition generally available to research workers today give a single analysis for swedes, with no indication what the deviations from it may be. This example draws attention to the lack of scientific data which handicaps so much agricultural research at the present time.

From the historian's point of view much the most interesting parts of the book deal with the history of the Station itself, the five-

hundred-year-old peel tower (a note on which appears as an appendix), and the biographies of the Station's first three directors. Each of these came from across the Border from farming stock, and it is possibly because of this that the early experiments at Cockle Park were related so closely to the financial side of farming. In addition, the times were depressed and the findings of science were unlikely to be followed in practice unless it could be proved beyond reasonable doubt that they would be successful financially. Somerville was fortunate in having chosen the application of phosphate (in basic slag) to poor grass land for his main experiments, for the results were spectacular in spite of the limitations of finance and staff under which he laboured.

But after three years at Cockle Park he left for Cambridge, and was succeeded by Middleton. Middleton's time there was short, too, and he was effective mainly in carrying on and extending the work Somerville had initiated. Middleton had already made a name for himself in India before he came to Northumberland, and he had a distinguished career subsequently at Cambridge and at the Board of Agriculture. But he spent long enough at Cockle Park for the fine scientific approach which he possessed to be recognized by his colleagues and successors.

Gilchrist, the third of the trio, made Cockle Park his lifetime's work and interest. His best known contribution to improved farming was the seeds mixture incorporating wild white clover, which made Cockle Park a worldwide name. In the Foreword, Sir John Russell writes that Gilchrist failed to receive the rewards that his work entitled him to. It was too empirical to attract the notice of universities, while the State bestows its honours not on professors of agriculture as such. Somerville and Middleton both received knighthoods, but they had left Cockle Park first, and they achieved fame in governmental work as well as in academic research.

The illustrations, which add to the pleasure of reading the book, include a photograph each of Somerville, Middleton, and Gilchrist. Somerville's is a reproduction of a painting

presented to him in 1923 by the Oxford University Plough Club. As those who can remember him personally must now be confined to his Oxford acquaintances, this choice is a particularly happy one.

For the rest, the references to prices and other conditions at the beginning of the century make an interesting comparison with those of today. There were instances of wheat being sold at 18s. a quarter, of rents at less than 10s. an acre, and linseed cake at £8 5s. a ton. The value of a calf was put at 40s. and cattle were usually valued at between 30s. and 40s. a cwt. Forty years ago a visit from Newcastle to Cockle Park, nineteen miles

away, took a full day and involved a train journey to Morpeth and a 4½-miles trap or horse-charabanc ride, and must have required a considerably greater sacrifice of the King's College students' time than is involved today. Communications with the College had to be by letter and a bedroom was reserved for the use, when he required it, of the Scientific Director. *Cockle Park Farm* is not a history book, but there is a lot of history in it. Moreover, the new emphasis on animal husbandry at Cockle Park is rapidly banishing those experiments which this book relates to the realm of history.

W. HARWOOD LONG

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Printed at The Broadwater Press, Welwyn Garden City, Herts.

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